

**WISCONSIN ENDANGERED RESOURCES REPORT # 130**  
**STATUS OF THE TIMBER WOLF IN WISCONSIN**  
**PERFORMANCE REPORT 1 JULY 2003 THROUGH 30 JUNE 2004**  
**By Adrian P. Wydeven and Jane E. Wiedenhoeft**

SUMMARY

This report covers activities conducted from 1 July 2003 through 30 June 2004, on wolf conservation in Wisconsin. The Wisconsin DNR reclassified wolves from endangered to threatened in 1999, and approved delisting wolves on 24 March 2004. The U. S. Fish and Wildlife Service downlisted wolves to threatened status on 3 April 2003, and began work in 2004 for complete delisting of wolves. The 1999 Wisconsin Wolf Management Plan determined wolf management in the state, and this report follows the outline of the wolf plan to describe wolf management activities.

Twenty-three wolves were live-captured and fitted with radio tags in 2003 in 17 different packs. Seventy radio tagged wolves were monitored during the study period. Mean territory size was 32 square miles for 22 adult wolves. The minimum count for the wolf population in winter 2003-2004 was 373 to 410 wolves in 108 packs, and included 361 to 398 wolves outside of Indian reservations. Seventeen wolves being actively monitored died during the period from the following mortality factors: 5 from disease, 1 other wolves, 5 shootings, 2 vehicle collisions, 1 euthanized at depredation site, 2 capture related, and 1 unknown causes. A total of 66 wolves were found dead in Wisconsin and included death from the following: 8 disease, 1 other wolves, 9 shootings, 23 vehicle collisions, 21 euthanized at depredation sites, 2 capture related deaths, and 2 unknowns. Mange caused most mortality from disease and was detected on 7 of 23 wolves handled in 2003. Reports of wolf observations were received from 40 Wisconsin Counties. Thirty-one cases of wolf depredation on domestic animals occurred during the study period, and included death of 29 cattle, 19 sheep, 6 game farm deer, plus 8 dogs killed and 2 injured. Twenty-two wolves were live-trapped from farms, and 21 were euthanized, plus nonlethal methods were used on many farms. Various other strategies for implementing the 1999 Wisconsin Wolf Management Plan were also conducted during the period.

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**RECOVERY OF THE TIMBER WOLF  
PERFORMANCE REPORT**

1 July 2003-30 June 2004

Prepared by Adrian P. Wydeven and Jane E. Wiedenhoef

**Job:** 106.1 Wolf Management Zones  
106.2 Population Monitoring and Management  
106.3 Wolf Health Monitoring  
106.4 Habitat Management  
106.5 Wolf Depredation Management  
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Timber or gray wolves (*Canis lupus*) were listed as endangered in the Great Lakes region in 1967 and 1974 by the U.S. Fish and Wildlife Service (U.S. Fish and Wildlife Service 1992). The State of Wisconsin listed wolves as Endangered in 1975, reclassified them to Threatened in 1999, and delisted wolves to Protected Wild Animal on August 1, 2004. The Wisconsin Department of Natural Resources (WDNR) has monitored wolves since 1979. A recovery plan with a reclassification goal to threatened status of 80+ wolves was completed in 1989 (Wisconsin DNR, 1989), and a management plan was completed in 1999 (Wisconsin DNR 1999). The management plan sets a state delisting goal of 250 wolves outside of Indian reservations, and a management goal of 350 wolves outside of Indian reservations. At the management goal, government trappers may conduct proactive population control activities, and public harvest of wolves may be considered. The plan included 14 management strategies that represent the general outline of this report.

The 1992 Federal Recovery Plan for the eastern timber wolf established reclassification goals of 80+ wolves for 3 years in Wisconsin, and a delisting goal of 100+ wolves for 5 years for Wisconsin and Michigan (U.S. Fish & Wildlife Service 1992). Federal delisting also required a stable population of 1251 to 1400 wolves in Minnesota, and approved management plans for each state. The Minnesota wolf population was 2450 wolves in 1998 (Berg and Benson 1999), and currently is probably at 2000 to 2500. In 2004, Michigan and Wisconsin shared about 734 wolves, and had exceeded the 100+ threshold for 11 years. On April 1 2003, the U.S. Fish and Wildlife Service reclassified wolves to Threatened in Wisconsin, Michigan (Minnesota has been listed as threatened since 1978), and other states in the Eastern Distinct Population Segment (EDPS). On July 16, 2004 U.S. Fish and Wildlife Service began the process to delist wolves, and could complete the process in 2005.

Personnel and funding: Funding for wolf conservation activity in Wisconsin was from the following: Federal Aid in Wildlife Restoration Project W-154-R; U.S. Fish and Wildlife Service, Endangered Species Grants; funds from the Nicolet-

Chequamegon National Forest; Wisconsin Endangered Resources Fund (tax check-off and license plate); Timber Wolf Alliance (TWA); Timber Wolf Information Network (TWIN); USDA-Wildlife Service research funds (John Shivik); funds from research grant for Thomas Gehring and Jason Hawley at Central Michigan University, funds for research by Ellen Heilhecker at University of Wisconsin-Stevens Point, Defenders of Wildlife, National Wildlife Federation, and donations from private individuals.

Adrian Wydeven was the ecologist in charge of the project, and was assisted by project wolf technicians Ron Schultz, Sarah Boles and Jane Wiedenhoeft. DNR pilots conducting aerial monitoring of collared wolves included: John Bronson, Joe Sprenger, Mike Weinfurter, Phil Miller, Paul Anderson, Dan Cardinal, and Bob Clark. Other DNR personnel that assisted extensively on wolf monitoring included Dick Thiel, Wayne Hall, Kerry Beheler, Dr. Julie Langenburg, Michele Windsor, Randy Jurewicz, Ken Jonas, Greg Kessler, Todd Naas, Bruce Bacon, Rich Wissink, Linda Winn, and Mary Singsime. Buck Follis with the USDA-Wildlife Service conducted trapping of wolves for monitoring. Dead wolves were necropsied by Dr. Nancy Thomas and Dr. Valerie Bochsler and others at the National Wildlife Health Center in Madison, and wolf necropsies were coordinated through Dr. Grace McLaughlin. Live trapping and field investigations of wolf depredations were conducted under the supervision of Dave Nelson and district supervisors Bob Willging and Scott Beckerman of USDA-APHIS-Wildlife Services. Lisa Naughton (University of Wisconsin-Madison) and graduate student Rebecca Grossberg conducted attitude surveys toward wolves in Wisconsin. Ellen Heilhecker under Dr. Eric Anderson, of UW-Stevens Point conducted research on pup mortality. Jason Hawley under Dr. Thomas Gehring of Central Michigan University is conducting research on shock collars as a means of reducing wolf depredation. Over 113 volunteers conducted winter track surveys across northern and central Wisconsin.

#### Job 106.1 WOLF MANAGEMENT ZONES

Four wolf management zones were created in the 1999 wolf management plan (Figure 1). Wolf populations and summary of wolf management activities are discussed for each zone below.

Zone 1 (18,384 square miles) represents the northern forest wolf range in Wisconsin, and in winter 2003-2004 consisted of 305 to 338 wolves including 87 packs and at least 10 loners. Packs occurred in 20 of the 21 counties in the zone, and Public reports of wolf observations were received in 19 counties. Eight dogs were killed and 2 injured in 10 cases in 7 counties. Livestock depredation included 22 cattle, 19 sheep, and 6 game farm deer on 20 farms in 8 counties. Nine wolves were trapped on farms and 8 were euthanized. Average deer density in winter across the zone was 24.8 deer per square mile (range 12 to 39 deer per square mile), and was above the goal of an average of 19 deer per square mile. Wolf packs occupied 4,309 square miles of the zone at a density of about 1 wolf per 14 square miles.

Zone 2 (4,521 square miles) represents the central forest wolf range, and contains 50 to 54 wolves in 15 packs and at least 2 loners in winter 2003-2004. The zone contains portions of 10 counties, but consists mainly of 7 counties that all contained packs. Public reports of wolf observations were received from 3 of these counties. No depredations on domestic animals occurred in the zone. Average deer density in winter in the zone was 33.4 deer per square mile (range 29 to 36 deer per square mile); the goal for the zone is an average density of 27 deer per square mile. Wolf Packs occupied 626 square miles of the zone at a density of about 1 wolf per 12 square miles.

Zone 3 (~18,000 square miles) represents wolf dispersal habitat and marginal wolf habitat in areas of mixed forest/farmland across central and southwest Wisconsin and includes portions of 33 counties. This area was not expected to be important wolf habitat, and was not expected to support many packs. In winter 2003-2004 at least 20 wolves occurred in the zone and included 6 packs and 2 loners, but only one pack appeared to have produced pups. Reports of wolf observations were received from 11 counties. Five wolves found dead in the zone were probably loners traveling through the zone, and occurred in Marathon, Marquette, and Portage Counties. Four cattle were killed at 3 farms in 3 counties in the zone, and 2 wolves were trapped and euthanized on 2 of the farms.

Wolf packs covered about 226 square miles in the zone, and occurred at an average density of 1 wolf per 13 square miles in occupied range.

Zone 4 (~16,000 square miles) represents portions of southern and eastern Wisconsin, and includes 28 counties in portions of the state that are mostly agricultural and urban areas. No packs were detected in the zone. Reports of wolf observations were received from 10 counties in the zone. Five wolves, probably dispersers were found dead in the zone in Brown, Door, Jefferson, Outagamie, and Sauk Counties. No reports of wolf depredation were received in the zone.

## JOB 106.2 POPULATION MONITORING AND MANAGEMENT

Twenty-three wolves were live-trapped and radio tagged during 2003 in 17 packs in the state (Table 1). Captures included 9 adult (average weight 83 pounds), 3 adult females (average 70 pounds), 3 yearling females (average weight 51 pounds), 3 male pups (38 to 53 pounds), 5 female pups (26 to 38 pounds). Only 2 of the pups were captured in northern Wisconsin; the other pups were part of a pup mortality study in the central forest.

A total of 70 radio tagged wolves were monitored during the study period in 2003-2004 (Table 2). Sixty-seven radio tagged wolves were monitored in 49 different packs in Wisconsin, and 3 were monitored in 2 Minnesota packs and one as a disperser in Michigan. During the period 16 radio tagged wolves died, signals were lost on 13 wolves, 2 wolves dispersed to Michigan, and a GPS collar was dropped off a wolf. Sex and age composition of radio tagged wolves (age during winter 2003-2004 or age when captured in 2004) included: 26 adult males, 28 adult females, 6 yearling female, 1 yearling male, 4 pup males, and 5 pup males.

Mean winter home range of 28 wolves located 20 or more times was 32 square miles. Mean winter home range for 22 adults was 32 square miles (range 8 to 69 square miles). Home range seemed to vary by zones and was largest in zone 1 (mean 36 mi<sup>2</sup> for 18 wolves), smallest in zone 3 (mean 19 mi<sup>2</sup> for 5 wolves) and intermediate in zone 2 (mean 29 mi<sup>2</sup> for 5 wolves).

A total of 108 packs/ groups were identified in 29 Wisconsin Counties through radio tracking of radio tagged wolves, and snow track surveys of packs without radio tagged wolves (Figure 2). A total of 87 packs were located in Zone 1, 15 packs were in Zone 2, and 6 packs were in Zone 3. During winter 2003-2004, 27 packs (25%) contained radio tagged wolves for portions of the winter.

### Dispersing and Translocated (Depredating) Wolves

Wolf 246M, an adult male translocated from depredations in Burnett County, was released into Forest County on 27 May 1998, but was lost until relocated on 28 October 2002 in the Harrison Hills Pack of Lincoln County. His mate was killed in late November 2002, and 246M then roamed broadly in northeast Lincoln, south-central Oneida, and northwest Langlade County before losing his signal after 24 July 2003 in north Lincoln County. His last location was about 40 miles southeast of his release site.

Wolf 249F, a yearling female captured in the Price Creek Pack of Price County on 24 October 2002, was shot to death 178 miles to the southeast in Door County on 16 February 2004.

Wolf 336M, 3-year old male from the Bootjack Lake Pack of Oneida County was lost after 10 March 2003, and was detected 87 miles east in the area of the Pike River in northern Marinette County on 24 July 2003. He apparently joined a pack or established a new pack in this area.

Wolf 426F, a 2-year old adult female from the Bear Bluff Pack of Jackson County, dispersed after 11 December 2003, and by 16 February had moved to a new home range area 42 miles to the southeast in the Caves Creek area of northwest Marquette County. She remained in this home range during the rest of the study period.

Wolf 448F, 2-year old female dispersed from the Pine Lake Pack in Iron County after 19 December 2003, and was last detected on 22 December 2003 in north Price County 12 miles to the south. She was lost after this date.

Wolf 454F, adult female, was captured on a farm with wolf depredation in northern Langlade County in summer 2002, and was released with her mate and 5 pups to the Menominee Indian reservation on 3 September 2002, 32 miles to the southeast. The pack settled along the Oconto River, 12 –14 miles further east in Oconto County. With the death of her mate, and death and dispersal by other pack mates, 454F began spending more time away from the pack home range. She was last detected in the Oconto River pack area on 22 June 2004, and was discovered in western Shawano County, 36 miles to the west on 27 July 2004. More on her in future reports.

Wolf 456F, was trapped as a yearling female in Burnett County and released into Vilas County on 25 July 2002. She initially traveled south to the Somo River area of northwest Lincoln County, but in December 2003 began spending time in the Spirit Lake area of southeast Price and northeast Taylor County. She seemed to settle into the Spirit Lake area in winter 2003-2004, about 44 miles south of the release site.

Wolf 459M, was an adult male that left the Hoffman Lake Pack area in February 2003, and was lost to the east after 7 April 2003. He was rediscovered on 5 February 2004, 70 miles to the northeast in Ontonagon County, Michigan.

Wolf 464F, an adult female, was last detected in the Moreland Lake Pack on 10 November 2003, and on 17 December was killed 7 miles to the east in the Rainbow Lake Pack, by pack members.

Wolf 466F, a yearling female in the Bootjack Lake Pack in Oneida County, left the territory after 22 December 2003. She moved 58 miles to the northeast into Houghton County, Michigan, in February 2004 and monitoring was discontinued by Wisconsin DNR. On 25 May 2004, Wolf 466F was found back in the Bootjack Lake territory, and remained there through the rest of the study period.

Wolf 474M, adult male from the Dunbar Pack left his territory after 31 December, 2003, and by 6 April 2004 was 49 miles to the southeast in Menominee County, and by 26 May 2004 had moved 100 miles southeast of his original home to northern Portage County. He remained in the Dewey Marsh area of northern Portage County for the rest of the study period.

Wolf 479M, pup male in the Ranger Island Pack in Lincoln County, left his home territory as he approached his first birthday, after 22 March 2004. He was located in the areas of the Kidrick Swamp pack in Taylor County, 40 miles to the west on 22 June 2004. It was not clear if he had joined the pack.

Wolf 481M, adult male from the Murray's Landing Pack in Iron County, left his home territory after 25 February 2004. By 22 April he had settled 25 miles to the south into a wild area east of Phillips in Price County, where he may have established a new territory.

Wolf M4914M, an adult male from Michigan was killed by vehicle collision in Rusk County on 8 May 2004, 270 miles west of his last location in Schoolcraft County, Michigan on 25 March 2004. The death site was 295 miles west of his capture location in Mackinac County, Michigan on 18 October 2003.

Noncollared Wolves: Several non-collared wolves were probably also dispersers based on unusual location of death sites. A yearling male was killed near Spring Green, Sauk County on 26 September 2003, 57 miles from the nearest pack. On 23 November 2003, an adult male wolf was killed by shooting in western Marinette County, 12 miles from the nearest known pack. An adult yearling female was killed by vehicle collision in western Marathon County on 6 January 2004, 15 miles from the nearest wolf pack. A yearling female was killed by vehicle collision near Johnson Creek in Jefferson County on 28 January 2004, 98 miles from the nearest wolf pack. A yearling female was killed by vehicle collision near Appleton in Outagamie County on 29 January 2004, about 80 miles from the nearest breeding pack. On 2 March 2004, a second wolf was photographed with a trail camera near Appleton, also 80 miles from the nearest known wolf pack. A yearling male was found dead from shooting east of the Mead Pack in Portage County on 31 March 2004. A yearling female was killed by vehicle collision in southern Marathon County east of the Mead Pack on 24 April 2004. A yearling male was killed by vehicle collision in southern Brown County on 5 May 2004, about 85 miles from the nearest breeding pack. On 6 May 2004, a male wolf was killed by vehicle collision east of the Mead Pack in northern Portage County.

#### Wolf Count Summary

Through radio telemetry monitoring of radio tagged packs, snow tracking of non-radio tagged packs, and public and agency reports of wolf observations, a total statewide count was obtained of a minimum of 373 to 410 wolves in winter 2003-2004 (Table 3). Wolves occurred in 108 packs and 14 as loners. Twelve wolves occurred on Indian reservations, thus the count outside of Indian reservations was 361 to 398 wolves. This was the 3<sup>rd</sup> year the delisting goal of 250 wolves outside of Indian reservations was achieved and the first year at the management goal of 350 wolves outside of Indian reservations.

The wolf count in 2004 was 11% higher than 2003. The state population had grown at an average rate of 20% annually from 1985 to 2002, but the last 2 years the growth rate has only averaged 7% annually. It appears that the wolf population may be approaching the carrying capacity of suitable habitat in the state.

Average pack size was 3.5 wolves per pack for the state (range 2 to 11 wolves per pack). Wolf territories covered 5,161 square miles at a density of 1 wolf per 13.0 to 14.4 square miles. DNR pilots observed and detected 99 wolves on 497 radio locations by radio tracking of wolves, and included members of 33 different packs. Non radio tagged packs were counted along 3655 miles of snow track survey by DNR trackers, and 4869 miles tracked by volunteers. Additionally reports of wolf observations were used to direct surveys and supplement information from radio-tracking and snow track surveys.

An estimated 105 to 150 wolf pups survived to mid or late winter 2004. Using a midpoint of 128 pups and 94 possible breeding packs in 2003, estimated pup survival was 26% statewide. Pup survival rates were about 27% for northern Wisconsin and 24% for central Wisconsin. Between 31 to 40 packs (29- 37%) had no surviving pups, although some may have included newly formed breeding pairs.

A total of 66 wolves were found dead in Wisconsin during the study period (Table 4). Of dead wolves, 17 had active radio transmitters, and two were collared wolves that were off the air (249F, M4914M). Mortality for 17 active radio tagged wolves was: 5 disease including at least 4 with mange (29%), 1 other wolves (6%), 5 shooting (29%), 2 vehicle collisions (11%), 1 euthanized at depredation site (6%), 2 capture-related deaths (12%), and 1 unknown (6%). Overall mortality for 66 wolves was: 8 disease (12%), 1 other wolves (2%), 9 shooting (14%), 23 vehicle collisions (35%), 21 euthanized at depredation sites (32%), 2 capture related deaths (3%), and 2 unknowns (3%).

Among the active radio collars 35% were caused by natural mortalities, but if the unknown and capture related mortalities are not included, 43% of mortality was from natural causes. For the overall mortality, only 14% was due to natural causes, but this sample is more biased toward human caused mortalities such as road kills and depredation control activity. Control trapping represented 32% of all wolves found dead, but only 6% of mortality on active collared wolves. Thus it appears that control trapping will become a more important mortality factor on wolves in the future, but still represents a relatively small percentage of the various mortality factors affecting wolves.

A summary of wolf mortality from late 1979 through June 2004 on radio-collared wolves is shown in Table 5. Overall, 55% of all known mortality was due to human causes, and 45% due to natural causes. A new category shown for the current study period is mortality due to depredation control activity. This will probably become a more important mortality factor in the future as the wolf population continues to expand and as more wolves expand into agricultural areas. It appears that the most important mortality factors affecting wolves were illegal shooting, disease, vehicle collisions, and other wolves.

#### Statewide Wolf Distribution

Reports were received of 272 reports of wolf observations from private citizens and agency personnel from 40 Wisconsin Counties (Table 6). Only observations classified as “probable” or “possible” are reported here, although some may include coyotes, wolf-dog hybrids, and wolf-like dogs. The reports of wolf observations were less than 2002-2003 when 372 wolf observations were reported. Some of this reduction may be due to the fact that agency personnel were asked to report wolf observations to the DNR Science Services office in Rhinelander. Thus less people were reporting to the Wolf Program at the DNR office in Park Falls. Highest report rates were for Marinette (28), Price (23), Oneida (20), Bayfield (16), Iron (16), and Washburn (16). This was the first time that Marinette County in northeast Wisconsin received highest report rates. Packs have recently established in this county and are apparently more readily observed. Although the largest percentage of wolf observations continue to occur in counties with known wolf packs, many observations are occurring in less traditional areas. The death of wolves in Sauk, Jefferson, Brown, Outagamie, and Door Counties does indicate that dispersing wolves are traveling widely through the state.

#### JOB 106.3 WOLF HEALTH MONITORING

Disease testing was conducted on 22 of 51 wolves live-trapped in 2002, and 19 of 23 wolves in 2003 (Table 7). Lower percentage of wolves were disease tested in 2002 due to changing priorities in disease testing, and greater emphasis was placed on pups and wolves in central Wisconsin. Titer responses showed the following positive responses: canine parvovirus 19 of 27, infectious canine hepatitis 13 of 23, canine distemper virus 22 of 27, Ehrlichia equi 21 of 26, Lyme disease 16 of 29, and Blastomycosis 0 of 14 wolves. Ehrlichiosis tests were only recently initiated, and apparently a high percentage of wolves showed antibody responses. Other disease tests were similar to previous years.

In 2002, 8 of 51 wolves handled showed alopecia (hair loss), a sign of possible mange, compared to 7 of 23 wolves in 2003. In 2002 mange occurred mainly in central Wisconsin, but in 2003 was more broadly spread. Among radio collared wolves, mange represented at least 24% of mortality. Mange may become one of the factors that determines the carrying capacity of wolves for Wisconsin and the Great Lakes region.

#### JOB 106.4 HABITAT MANAGEMENT

The project ecologist served on the DNR panel reviewing the new plan for the Chequamegon-Nicolet National Forest, and provided written comments on the draft plan for protecting wolf habitat. The final plan was published on April 2004 and included provisions for maintaining areas of suitable wolf habitat. Wolf distribution information was shared with forest managers of national, state, county and industrial forest managers.

#### JOB 106.5 WOLF DEPREDAATION MANAGEMENT

Thirty-one cases of wolf depredation on domestic animals occurred during the 2003-2004 study period (Table 8). These included 10 cases of depredation on dogs including death of 8 and injury to 2 dogs. Twenty-one cases of depredation (21 different farms) occurred on livestock including 18 cases of depredation on 29 cattle, 2 cases of depredation on 19 sheep, and 1 case of depredation on 6 game farm deer. A total of 10-11 packs (10%) and 5 loners or dispersers were involved in depredation on livestock, 6 packs (6%) of packs and 1 or 2 loners depredated on dogs, and no pack depredated on both dogs and livestock. The Haystack Corner Pack depredated on 3 of the 8 dogs killed during the study period.

USDA-Wildlife Services conducted trapping on 17 farms and captured 22 wolves on 10 farms. Captures on individual farms ranged from 1 to 8 wolves, and all were euthanized, except a pup captured on a farm in Douglas County in June 2004. Additionally USDA-Wildlife Services provided flashing lights at 5 sites with risk of wolf depredation, and 2 residences with concern about human safety from bold or hybrid wolves. Livetrapping was also attempted in January-February 2004 along Highway 54 in Jackson County where human safety concerns developed from 1 or 2 wolves living along the highway; no wolves were captured. Defenders of Wildlife provided funding to a farmer for a water site for cattle in open pasture land away from wooded creek bottoms where wolf kills had occurred.

#### JOB 106.5 WOLF EDUCATION PROGRAMS

During the study period the project ecologist gave 25 talks to 1159 people. Other biologists and technicians giving talks included the following (talks/people): John Huff (1/15), Wayne Hall (1/30), Michele Windsor (2/25), Rich Wissink (1/30), Gary Dunsmoor (5/100), Tim Van Deelen (2/70), Randy Jurewicz (3/60), Dave Ruid with USDA-WS (2/135), Dave Nelson with USDA-WS (1/40), Jane Wiedenhoef (4/140), and Sarah Boles (4/87) or total of 26 talks for 732 people. Wolf talks were also given by naturalists in state parks and forests. Eighteen speakers with the Timber Wolf Alliance provided 108 talks to 5791 people. Talks by the Wolf Program personnel included 27 people at a Timber Wolf Alliance (TWA) training course, 123 people at 3 volunteer carnivore tracking courses, and 11 Speaker Bureau volunteers with TWA. The WDNR, US Forest Service, and other agencies cooperated with TWA to sponsor Wolf Awareness Week in October 2003, and distributed over 6000 education posters in the state. The WDNR and National Wildlife Federation, USDA-Wildlife Services, TWA and Wisconsin Bear Hunters Association developed a pamphlet for hunters titled "A Guide for Reducing Conflict between Wolves and Hunting Dogs", and distributed among hunters in Wisconsin. The project ecologist attended 3 meetings with TWA to coordinate wolf education activity. Media contacts and interviews by the project ecologist consisted of 108 contacts, including: 54 newspaper, 35 radio, 11 TV and 8 magazine interviews. The major news stories included wolf depredations on dogs and livestock, state delisting plans, wolf population growth and surveys, and approval of state delisting. News releases were prepared for dog and livestock depredations, closed season for coyote hunting, state delisting hearings, NRB approval of state delisting, and wolf population count. Three progress reports and one annual report were prepared, mailed and placed on the wolf web: <http://dnr.wi.gov/org/land/er/mammals/wolf/>. Other information provided on the Wisconsin DNR website wolf pages included the map of wolf pack territory distribution, Wolves in Farm Country pamphlet, A Guide for Reducing Conflict between Wolves and Hunting Dogs pamphlet, information on wolf depredations on hunting dogs during the bear dog training and bear hunting seasons, and information on the Volunteer Carnivore Tracking program.

#### JOB 106.7 LAW ENFORCEMENT

Project personnel assisted WDNR conservation wardens and USFWS special agents in investigating 9 wolf shootings by collecting carcasses and other evidence, providing background information, transporting carcasses, and preparing news releases. Two convictions were made during the period on wolves shot illegally in Door and Jackson Counties.

The coyote closed area in Zone 1 was monitored during the deer hunting season. A news release on the closed season and protected status of wolves was prepared prior to the deer hunting season. Extra flights were flown for radio collared wolves during the hunting seasons to detect possible shootings.

#### JOB 106.8 INTERAGENCY COOPERATION AND COORDINATION

The Wisconsin Wolf Science Committee (previously Wolf Technical Advisory Committee) met with the Wisconsin Stakeholders on 17 April 2004, and met on 25 May 2004 to examine policies of wolf management and discuss development of administrative rules for wolf depredation payments. The Wolf Science Committee included members from Wisconsin

Department of Natural Resources, Wisconsin Department of Agriculture Trade and Consumer Protection (DATCP), University Extension, U.S. Forest Service, U.S. Department of Agriculture-Wildlife Services, Great Lakes Indian Fish and Wildlife Commission (GLIFWC), U. S. Fish and Wildlife Service, and Wisconsin County Forests.

Meetings were held with the Wisconsin Wolf Stakeholders on 25 October 2003 and 17 April 2004 to discuss wolf management issues such as wolf depredation payments, wolf population, review of the state wolf plan, prepare for delisting hearings and other aspects of wolf management. The Stakeholders consist of a diverse group of interested parties including hunting groups, environmental groups, animal welfare organizations, farm groups, tribes, and educators.

Meetings were held by WDNR biologists and technicians involved in wolf surveys on 8 October 2003, and 16 April 2004 to review surveys and plan upcoming survey work. On 21 April 2004 a meeting was held with WDNR and USDA-Wildlife Services personnel to discuss trapping, handling and health monitoring of wolves. The project ecologist serves on the Federal Eastern Gray Wolf Recovery Team, and the group met (conference call) on 19 December to plan the start of the federal delisting process.

The Midwest Wolf Stewards met at Odanah, Wisconsin on 20–21 April to review management and research of wolves in the Great Lakes region. The meeting included involvement from Wisconsin DNR, Michigan DNR, Minnesota DNR, Ontario Ministry of Natural Resources, U.S. Fish and Wildlife Service, U.S. Forest Service, USDA-Wildlife Services, Michigan Technological University, University of Wisconsin, Central Michigan University, International Wolf Center, GLIFWC, National Wildlife Federation, Wildlife Science Center, Timber Wolf Alliance, Defenders of Wildlife, Wisconsin Bear Hunters Association and others. A meeting was also held on 16 October 2003 by Furbearer Managers from WI DNR, MI DNR, MN DNR, and GLIFWC to discuss management of wolves, bears and furbearers.

#### JOB 106.9 PROGRAM GUIDANCE AND OVERSIGHT

Approval was obtained on 13 August 2003 from the Wisconsin Natural Resources Board in Superior to start a state delisting process for gray wolves and remove them from the state threatened list. Public hearings were held in Madison, Spooner, and Stevens Point on 5 November, and Black River Falls and Rhinelander on 6 November. About 200 people attended the hearings and 41 gave oral comments. Additionally, the DNR received 108 individual letters, 893 form letters, and 1 petition letter with 10 signatures. A total of 93% of the comments supported delisting. On 24 March the NRB approved the delisting of wolves and placing them on the state list of Protected Wild Animals. The delisting was expected to be finalized with publication of the state statutes on 1 August 2004.

Two meetings were held with the Wisconsin Stakeholders to review wolf management, plan the 5-year review of the 1999 Wolf Management Plan, and plan the state delisting process. A questionnaire to provide comment on the wolf plan was developed with the Stakeholders and Science Committee. The questionnaire was to be made available for public comment in the next fiscal year. Results of the questionnaire will be used by the Wolf Stakeholders and Science Committee to determine the need for changes or modifications of the plan.

#### JOB 106.10 VOLUNTEER PROGRAMS

Volunteers continue to be used extensively by the WDNR for wolf management in Wisconsin. Twenty-seven volunteers were trained at a TWA workshop 8-10 August 2003, and 11 volunteer speakers attended training on 15 May, 2004. TWA speakers provided 108 programs to 5791 people. A total of 123 volunteers attended 3 training sessions in fall, and 113 people conducted 4869 miles of track surveys in 69 survey blocks (~ 200 square miles each). During Fall 2003, 9 volunteers conducted hunter outreach, and made 331 contacts at hunting camps in Lincoln, Iron, Bayfield, Ashland, Sawyer and Taylor Counties. Volunteers also assisted with wolf trapping, radio collaring, and howl surveys, as well as manning educational booths at sports shows and other events.

#### JOB 106.11 WOLF RESEARCH

The Wisconsin DNR cooperated on several research projects on wolves in the state.

Research was conducted on use of a Minnesota-type wolf survey (Fuller et al. 1992, Berg and Benson 1999) in Wisconsin. The survey was conducted by Tim VanDeelen, WDNR research biologist and wildlife technician Amber Roth. The intent of this survey was to collect reports of wolf observations and sign from all agency personnel that spent time in wolf areas during winter 2003-2004. These observations would be used to construct maps of wolf distribution in the state. The survey would use

a sample of radio collared packs to determine average size of packs and size of territories. Preliminary results are expected to be available in fall 2004.

Lisa Naughton, Rebecca Grossberg, and Adrian Treves of University of Wisconsin–Madison, and Wildlife Conservation Society, prepared to do an attitude survey of Wisconsin residents on wolf depredation payments and management. This will be a follow-up to previous research on attitudes toward wolf management by northern Wisconsin residents, bear hunters, and farmers (Naughton et al. 2003).

Research on prediction of potential future wolf depredation was conducted previously and was published in 2004 (Treves et al. 2004). It was found that the areas of forest/agricultural fringe had some of the highest risk of wolf depredation and areas of higher interspersed forest and pastureland in southwest Wisconsin would have a high risk of depredation if wolves colonized the area.

Ellen Heilhecker and Eric Anderson of University of Wisconsin-Stevens Point completed their second year of study on pup movements and mortality factors in central Wisconsin (Heilhecker 2003). Ellen will be completing her masters thesis during the next period.

Jason Hawley and Thomas Gehring of Central Michigan University began their second season testing shock collars on wolves as a tool for reducing wolf depredation (Hawley 2004). They have been testing dog shock collars on wolves as a means for altering movements and behavior to discourage depredation on livestock. Earlier work by WDNR on use of shock collars for wolf depredation reduction was prepared for publication by Ronald Schultz (Schultz et al. 2004).

The wolf project cooperated in research on elk habitat selection in the Clam Lake area. Felicia Fawcett of University of Wisconsin–Stevens Point began work on her M.S. thesis, on habitat selection of elk in relationship to wolf territories and other landscape features. She determined that elk avoided centers of wolf pack territories throughout most of the year. Dr. Tim Ginnett and elk biologist Laine Stowell assisted Felicia with her research.

Research was also conducted on resource selection by elk on the spatial relationship of their home range areas in relationship to resources at various scales, and distribution of wolf packs. A paper was prepared for publication and is being finalized (Anderson et al. in prep).

Trophic interactions with wolves and vegetation were examined, and findings were prepared for publication during the study period (Anderson et al. submitted). Forb species diversity and biomass was highest in cedar swamps in the center of wolf territories.

The Wisconsin DNR wolf workers Adrian Wydeven, Randy Jurewicz, Ronald Schultz, and Jane Wiedenhoef are continuing ongoing research with the National Wildlife Health Center (NWHC) in Madison with Grace McLaughlin, Valerie Bochsler, and Nancy Thomas. Most wolves found dead in the state have been examined by the Center. In spring 2004, it was decided that with the greater volume of wolf mortalities, the NWHC would focus on radio collared and federal legal cases, and the WDNR Wildlife Health Staff with Kerry Beheler will necropsy the other wolves. In 2003 a paper was published on the use of porcupine dens by wolves affected by mange (Wydeven et al 2003).

John Rafferty, Ph. D. candidate at University of Illinois-Urbana/Champaign is researching impact on wolves from shrinking suitable habitat due to future human developments across portions of northern Wisconsin. John is researching an extinction threshold model that will examine how wolves may respond to shrinking suitable habitat.

Research continued on osteopathology of wolves that have died in Wisconsin with Paula Holahan (University of Wisconsin), Nancy Thomas, and Adrian Wydeven. Attempts will be made to correlate pathological conditions on skeletons of wolves with necropsy results and field conditions.

Dorothy Ginnett of the University of Wisconsin-Stevens Point began conducting research on heartworm in wolves and other canids with Jerold Thies. Heartworm occurrence was examined by serological tests and necropsies of dead wolves and other canids.

A chapter was prepared for publication on characteristics of wolf packs that depredated on domestic animals. Adrian Treves presented some of these results at a Defenders of Wildlife Conference in 2002. The chapter will be published as part of *Predators and People: From Conflict to Conservation* (Wydeven et al. 2004).

Several presentations on research and management in Wisconsin were presented at the World Wolf Congress 2003, at Banff Alberta, Canada, 25-28 September 2003. Presentations contributed by Wisconsin DNR included the following: "Growth, survival, and productivity of a colonizing wolf population in Wisconsin" (Wydeven et al.); "Sarcoptic mange impact on gray wolves (*Canis lupus*) in Wisconsin" (Schultz et al.); "The effects of alpha wolf loss on reproductive success and pack dynamics" (Brainerd et al.); "Counting wolves –integrating data from volunteers" (Wiedenhoeft et al.); "Wolf-deer field study by high school students in Wisconsin" (Thiel); and "Wisconsin wolf damage control program" (Jurewicz).

The wolf program produced several other reports during the study period. The Wisconsin Wolf Population in 2002-2003 was published in the Wisconsin Wildlife Surveys (Wydeven and Wiedenhoeft 2003). Progress reports on wolf population monitoring were produced in fall, end of year/mid winter, and spring.

#### JOB 106.12 WOLF-DOG HYBRID AND CAPTIVE WOLVES

Eighteen cases of suspected wolf-dog hybrid incidents were reported during the study period (Table 9). Not all wolf-dog incidents were reported to WDNR because some were handled as problem or stray dogs by local law enforcement officials. Wolf-dog problems occurred across 14 Wisconsin counties and occurred throughout the state. Two cases included wolf-dog hybrids attacking dogs and 3 cases were reported hybrids acting aggressive toward people. Last study period 2 hybrids were detected in 2 packs (433M, 437F), and both died, but one may have left an offspring (461F). During the current study period a possible hybrid pup was found in Lincoln County; it was too small to collar but was marked for future identification.

Paula Holahan at UW-Madison has been working closely with WDNR at helping to identify possible wolf-dog hybrids, and she is conducting research on refining ways of identifying wolves and wolf-dog hybrids.

Captive Wildlife Regulations were passed by the Wisconsin Legislature on 8 March, 2002, but it has yet to be determined if these regulations can be used to regulate wolf-dog hybrids in the state. If it is determined that the regulations allow regulation of wolf-dog hybrids, administrative rules will be developed.

#### JOB 106.13 WOLF SPECIMEN MANAGEMENT

Staff from the WDNR, and the National Wildlife Health Center, met in Madison on 16 July 2004 to discuss wolf carcass management and disposition. It was decided that the NWHC would continue to necropsy radio-collared wolves and federal legal cases while still federally listed. After delisting the NWHC may continue to conduct necropsies on radio collared wolves during the first 5 years post-delisting, when USFWS will be requiring intense population monitoring. Noncollared wolves found dead in the field would normally be provided to the WDNR Wildlife Health team for necropsies. Carcasses will be made available as specimens for research museums when approved research projects are in place, otherwise specimens would be distributed to educational organizations, tribes, or conservation agency offices, based on preference system on when requests were made to Randy Jurewicz. Wolf specimens handled by WDNR regions included 44 Northern Region, 14 West-Central Region, 6 Northeast Region, and 2 in the South Central Region.

#### JOB 106.14 ECOTOURISM

Workshops by Timber Wolf Alliance and Timber Wolf Information Network brought people to wolf range in the Drummond and Tomahawk areas to enjoy the opportunity to get close to wolves and explore wolf habitat. Most of these people also spend money in local businesses. Additional people travel to locations such as Trees for Tomorrow, and Sandhill Wildlife Area, as well as state parks and forests to learn about wolves and enjoy local attractions. On 12 July 2003, a Natural Resource Foundation tour of wolf habitat was given to 40 people, and included dinner at a local supper club as part of the tour in the Glidden area.

Ecotourism involving wolves is continuing to be monitored by the WDNR and negative impacts have not been detected. WDNR will continue to support ecotourism by providing materials on wolf locations and ecology.

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Table 1. Wolves captured and radio-tagged in Wisconsin in 2003.

| <b>Wolf Number</b>            | <b>Sex/Age<sup>a</sup></b> | <b>Weight (lbs)</b> | <b>Pack/Area</b> | <b>County Captured</b> | <b>Date</b> |
|-------------------------------|----------------------------|---------------------|------------------|------------------------|-------------|
| <b><u>Northern Forest</u></b> |                            |                     |                  |                        |             |
| G994 <sup>b</sup>             | M/A                        | 85                  | Ranger Island    | Lincoln                | 20 Jul 03   |
| G996 <sup>b</sup>             | M/A                        | 80                  | North Willow     | Oneida                 | 13 Jun 03   |
| W332 <sup>c</sup>             | F/A                        | 75                  | Pelican Lake     | Oneida                 | 28 Oct 03   |
| W462                          | M/A                        | 70                  | Black Lake       | Sawyer                 | 01 Jun 03   |
| W464                          | F/A                        | 68                  | Moreland Lake    | Bayfield               | 16 May 03   |
| W466                          | F/Y                        | 52                  | Bootjack Lake    | Oneida                 | 02 Jul 03   |
| W469 <sup>d</sup>             | M/A                        | 85                  | Murray's Landing | Iron                   | 06 Aug 03   |
| W472 <sup>e</sup>             | F/Y                        | 44                  | Bearsdale        | Bayfield               | 07 Nov 03   |
| W473                          | M/A                        | 91                  | Moose Lake       | Douglas                | 29 Jun 03   |
| W474                          | M/A                        | 96                  | Dunbar           | Marinette              | 19 May 03   |
| W476                          | M/A                        | 84                  | Truck Trail      | Douglas                | 21 Jun 03   |
| W479                          | M/P                        | 46                  | Ranger Island    | Lincoln                | 23 Aug 03   |
| W481 <sup>d</sup>             | M/A                        | 80                  | Murray's Landing | Iron                   | 07 Jul 03   |
| W482 <sup>d</sup>             | M/A                        | 80                  | North Willow     | Oneida                 | 10 Jun 03   |
| W485                          | F/Y                        | 56                  | Averill Creek    | Lincoln                | 07 Sep 03   |
| W489                          | M/P                        | 38                  | Averill Creek    | Lincoln                | 23 Aug 03   |
| <b><u>Central Forest</u></b>  |                            |                     |                  |                        |             |
| W311 <sup>f</sup>             | F/A                        | 68                  | Bear Bluff       | Jackson                | 01 Aug 03   |
| W411 <sup>g</sup>             | F/P                        | 26                  | Dead Creek       | Jackson                | 23 Jul 03   |
| W412 <sup>gh</sup>            | F/P                        | 28                  | Bear Bluff       | Jackson                | 30 Jul 03   |
| W413 <sup>g</sup>             | F/P                        | 30                  | Bear Bluff       | Jackson                | 05 Aug 03   |
| W414 <sup>g</sup>             | F/P                        | 27                  | Seneca           | Wood                   | 10 Aug 03   |
| W415 <sup>g</sup>             | F/P                        | 36                  | Martin Marsh     | Jackson                | 29 Aug 03   |
| W416 <sup>g</sup>             | M/P                        | 53                  | Wildcat Mound    | Jackson                | 09 Sep 03   |

16 wolves in northern forest (9 adult males, 2 adult females, 3 yearling females, 2 pup males)

7 wolves in central forest (1 adult female, 1 pup male, 5 pup females)

<sup>a</sup> Age at time of capture assuming birth date 1 April (P = Pup, Y = Yearling, A = Adult)

<sup>b</sup> Fitted with GPS collar and shock collar for aversion research project.

<sup>c</sup> Re-capture by coyote trapper; originally captured as an adult in 2000

<sup>d</sup> Fitted with VHS collar and shock collar for aversion research project.

<sup>e</sup> Captured by coyote trapper.

<sup>f</sup> Re-capture, originally captured as a yearling in 2000.

<sup>g</sup> Fitted with ear transmitter for pup mortality research project.

<sup>h</sup> Recaptured 8/2/03 and 8/4/03

Table 2. Radio telemetry data on wolves monitored from July 1, 2003 – June 30, 2004 in Wisconsin.

| <b>Wolf #<br/>&amp; Sex</b> | <b>Age<sup>a</sup></b> | <b>Pack<sup>b</sup></b>      | <b>Date<br/>Captured</b> | <b>Last<br/>Date</b>    | <b># of<br/>Locations<sup>c</sup></b> | <b>Winter<br/>Territory<br/>Size (mi<sup>2</sup>)</b> | <b># of<br/>Wolves in<br/>Territory<sup>d</sup></b> |
|-----------------------------|------------------------|------------------------------|--------------------------|-------------------------|---------------------------------------|---|---|
| <b><u>Zone 1</u></b>        |                        |                              |                          |                         |                                       |   |   |
| G994M                       | A                      | Ranger Island                | 19 Jun 03                | 04 Feb 04 <sup>*</sup>  | 19                                    | 13  | 4   |
| G996M                       | A                      | North Willow                 | 13 Jun 03                | 18 Aug 03 <sup>c</sup>  | 11                                    | -   | -   |
| M036F                       | Y                      | West Firelane                | 04 May 00 <sup>f</sup>   | Ongoing                 | 165                                   | 31  | 4   |
| M726M                       | A                      | East Firelane?               | 11 May 03 <sup>f</sup>   | Ongoing                 | 5                                     | NE  | -   |
| 241F                        | P                      | Porcupine Lake               | 20 Nov 97 <sup>g</sup>   | 6 Aug 03 <sup>**</sup>  | 278                                   | -   | -   |
| 246M                        | A                      | Harrison Hills/Disperser?    | 11 Apr 98 <sup>h</sup>   | 24 Jul 03 <sup>*</sup>  | 51                                    | -   | -   |
| 248M                        | A                      | Torch River                  | 28 Jun 00                | Ongoing                 | 203                                   | 44  | 5-7   |
| 291M                        | A                      | Chain Lake                   | 27 Jun 99                | 12 Aug 03 <sup>*</sup>  | 223                                   | -   | -   |
| 332F                        | A                      | Pelican Lake                 | 10 May 00 <sup>i</sup>   | 25 Nov 03 <sup>*</sup>  | 204                                   | 21  | -   |
| 336M                        | Y                      | Disperser/Pike River         | 03 Jun 01                | Ongoing                 | 142                                   | 28  | 3   |
| 351M                        | A                      | Chippewa River               | 17 Jun 00                | 19 Dec 03 <sup>**</sup> | 178                                   | 14  | -   |
| 355M                        | A                      | Little Rice River            | 28 Jun 01                | Ongoing                 | 157                                   | 69  | 9   |
| 376F                        | Y                      | Stella Lake                  | 12 Jun 01                | Ongoing                 | 164                                   | 11  | 2   |
| 431F                        | A                      | Moquah                       | 1 Jun 02                 | 16 Aug 03 <sup>**</sup> | 63                                    | -   | -   |
| 432F                        | Y                      | Butler Rock/Disperser        | 25 Jul 02 <sup>j</sup>   | 22 Oct 03 <sup>*</sup>  | 82                                    | -   | -   |
| 438M                        | A                      | Flag River                   | 21 May 02                | 03 Feb 04 <sup>**</sup> | 87                                    | 30  | -   |
| 439F                        | A                      | Flag River                   | 22 May 02                | Ongoing                 | 108                                   | 29  | 1-2   |
| 444F                        | A                      | Hellhole Creek               | 25 Jun 02                | Ongoing                 | 102                                   | 41  | 3   |
| 446F                        | A                      | Springbrook                  | 13 Jun 02                | Ongoing                 | 105                                   | 44  | 2   |
| 447F                        | A                      | Bird Sanctuary               | 21 Jun 02                | Ongoing                 | 107                                   | 35  | 6   |
| 448F                        | Y                      | Pine Lake/Disperser          | 20 May 02                | 27 Dec 03 <sup>*</sup>  | 83                                    | NE  | 2   |
| 456F                        | Y                      | Tripoli lone?/Disp/Spirit L. | 12 Jul 02 <sup>k</sup>   | Ongoing                 | 102                                   | 17/7  | 3   |
| 457M                        | A                      | Round Lake                   | 10 Sep 02                | 11 Dec 03 <sup>*</sup>  | 59                                    | 42  | 3   |
| 458F                        | A                      | Johnson Springs?             | 04 Sep 02                | 20 Dec 03 <sup>**</sup> | 68                                    | 6   | -   |
| 461F <sup>l</sup>           | P                      | North Willow                 | 20 Nov 02                | Ongoing                 | 83                                    | 43  | 4   |
| 462M                        | A                      | Black Lake                   | 01 Jun 03                | Ongoing                 | 56                                    | 28  | 3-6   |
| 464F                        | A                      | Moreland Lake/Disperser      | 16 May 03                | 17 Dec 03 <sup>**</sup> | 31                                    | 13  | 5   |
| 466F                        | Y                      | Bootjack Lake                | 02 Jul 03                | 12 Feb 04 <sup>m</sup>  | 34                                    | 64  | 2   |
| 468F                        | A                      | Moquah                       | 12 Jun 04                | 15 Jun 04 <sup>**</sup> | 2                                     | -   | -   |
| 469M                        | A                      | Murray's Landing             | 06 Aug 03                | Ongoing                 | 38                                    | 29  | 5-6   |
| 472F                        | Y                      | Bearsdale                    | 07 Nov 03 <sup>n</sup>   | Ongoing                 | 35                                    | 33  | 4   |

Table 2. cont.

| <b>Wolf #<br/>&amp; Sex</b> | <b>Age<sup>a</sup></b> | <b>Pack<sup>b</sup></b>    | <b>Date<br/>Captured</b> | <b>Last<br/>Date</b>    | <b># of<br/>Locations<sup>c</sup></b> | <b>Winter<br/>Territory<br/>Size (mi<sup>2</sup>)</b> | <b># of<br/>Wolves in<br/>Territory<sup>d</sup></b> |
|-----------------------------|------------------------|----------------------------|--------------------------|-------------------------|---------------------------------------|---|---|
| 473M                        | A                      | Moose Lake                 | 29 Jun 03                | Ongoing                 | 53                                    | 34  | 6   |
| 474M                        | A                      | Dunbar/Disperser           | 19 May 03                | Ongoing                 | 40                                    | 13  | 5-7   |
| 475F                        | A                      | Shanagolden                | 24 Jun 04                | Ongoing                 | 2                                     | -   | -   |
| 476M                        | A                      | Truck Trail                | 21 Jun 03                | 25 Aug 03 <sup>**</sup> | 9                                     | -   | -   |
| 477F                        | A                      | Hungry Run                 | 24 Jun 04                | Ongoing                 | 2                                     | -   | -   |
| 479M                        | P                      | Ranger Island/Disperser    | 23 Aug 03                | Ongoing                 | 44                                    | 20  | 4   |
| 481M                        | A                      | Murray's Landing/Disperser | 07 Jul 03                | Ongoing                 | 52                                    | 29  | -   |
| 482M                        | A                      | North Willow               | 10 Jun 03                | 14 Nov 03 <sup>*</sup>  | 22                                    | 13  | -   |
| 485F                        | Y                      | Averill Creek North        | 07 Sep 03                | Ongoing                 | 42                                    | 67  | 7   |
| 489M                        | P                      | Averill Creek South        | 23 Aug 03                | 25 Nov 03 <sup>**</sup> | 14                                    | 29  | -   |
| 493M                        | A                      | Kaine Lake                 | 24 Jun 04                | Ongoing                 | 1                                     | -   | -   |
| 495M                        | P                      | Averill Creek?             | 27 Jun 04                | Ongoing                 | 2                                     | -   | -   |
| 497M                        | A                      | Pine Lake                  | 28 Feb 04 <sup>o</sup>   | 16 Mar 04 <sup>**</sup> | 4                                     | 1   | -   |
| 499M                        | A                      | Nineweb Lake               | 15 Jun 04                | Ongoing                 | 4                                     | -   | -   |
| 504F                        | A                      | Kaine Lake                 | 24 Jun 04                | Ongoing                 | 2                                     | -   | -   |
| 505F                        | A                      | Bootjack Lake              | 30 May 04                | Ongoing                 | 6                                     | -   | -   |
| 507M                        | A                      | Little Rice River?         | 14 Jun 04                | 14 Jun 04 <sup>**</sup> | 1                                     | -   | -   |
| <b><u>Zone 2</u></b>        |                        |                            |                          |                         |                                       |   |   |
| 309F                        | P                      | Iron Run                   | 15 Nov 99                | 28 Jul 03 <sup>*</sup>  | 195                                   | -   | -   |
| 311F                        | Y                      | Bear Bluff                 | 01 Aug 03 <sup>p</sup>   | Ongoing                 | 398                                   | 34  | 3-4   |
| 338M                        | P                      | Rattail                    | 28 Jul 01                | Ongoing                 | 131                                   | 39  | 2   |
| 340F                        | A                      | Rattail                    | 05 Aug 01                | 16 Feb 04 <sup>**</sup> | 116                                   | 31  | -   |
| 341F                        | Y                      | Seneca                     | 31 May 01                | 16 Feb 04 <sup>**</sup> | 128                                   | 8   | 3   |
| 411F                        | P                      | Dead Creek                 | 23 Jul 03                | 25 Nov 03 <sup>**</sup> | 21                                    | 3   | -   |
| 412F                        | P                      | Bear Bluff                 | 30 Jul 03                | 8 Aug 03 <sup>**</sup>  | 3                                     | -   | -   |
| 413F                        | P                      | Bear Bluff                 | 05 Aug 03                | 15 Mar 04 <sup>q</sup>  | 26                                    | 18  | -   |
| 414F                        | P                      | Seneca                     | 10 Aug 03                | 27 Oct 03 <sup>*</sup>  | 21                                    | 2   | -   |
| 415F                        | P                      | Martin Marsh               | 29 Aug 03                | 15 Sep 03 <sup>q</sup>  | 5                                     | -   | -   |
| 416M                        | P                      | Wildcat Mound              | 09 Sep 03                | 06 Nov 03 <sup>*</sup>  | 12                                    | 9   | -   |
| 426F                        | Y                      | Bear Bluff/Disp./Caves Cr. | 2 Jul 02 <sup>r</sup>    | Ongoing                 | 81                                    | 16/8  | -/2   |
| 429F                        | A                      | Martin Marsh               | 3 Jun 02                 | Ongoing                 | 79                                    | 34  | 3   |

### **Zone 3**

|      |   |              |                        |         |     |    |   |
|------|---|--------------|------------------------|---------|-----|----|---|
| 393F | P | Long Lake    | 31 Jul 01 <sup>s</sup> | Ongoing | 150 | 19 | 2 |
| 449M | P | Oconto River | 18 Jul 02 <sup>t</sup> | Ongoing | 104 | 13 | 3 |
| 452F | P | Oconto River | 22 Jul 02 <sup>t</sup> | Ongoing | 103 | 15 | - |
| 454F | A | Oconto River | 19 Jul 02 <sup>t</sup> | Ongoing | 88  | 19 | - |

Table 2. cont.

| <b>Wolf #<br/>&amp; Sex</b> | <b>Age<sup>a</sup></b> | <b>Pack<sup>b</sup></b> | <b>Date<br/>Captured</b> | <b>Last<br/>Date</b>    | <b># of<br/>Locations<sup>c</sup></b> | <b>Winter<br/>Territory<br/>Size (mi<sup>2</sup>)</b> | <b># of<br/>Wolves in<br/>Territory<sup>d</sup></b> |
|-----------------------------|------------------------|-------------------------|--------------------------|-------------------------|---------------------------------------|---|---|
| 460F                        | A                      | Clam River              | 17 Oct 02 <sup>u</sup>   | Ongoing                 | 88                                    | 31  | 2   |
| 465F                        | A                      | Ft. McCoy               | 13 Dec 02                | Ongoing                 | 15                                    | 5   | 2   |
| <b><u>MN &amp; MI</u></b>   |                        |                         |                          |                         |                                       |   |   |
| M206M                       | A                      | MN pack                 | 30 Jun 01 <sup>v</sup>   | 05 Jan 04 <sup>**</sup> | 42                                    | 14  | -   |
| 388M                        | A                      | Crex Meadow MN          | 25 Jul 01                | Ongoing                 | 156                                   | 46  | -   |
| 459M                        | A                      | Disperser               | 26 Oct 02                | 05 Feb 04 <sup>m</sup>  | 26                                    | NE  | -   |

<sup>a</sup>Age at time of capture (P = Pup, Y = Yearling, A = Adult)

<sup>b</sup>Pack during winter of the study period

<sup>c</sup>Total locations from the time of capture

<sup>d</sup>Number of wolves in pack during midwinter

<sup>e</sup>GPS collar remotely dropped

<sup>f</sup>Captured in Gogebic County, Michigan

<sup>g</sup>Recaptured wolf, first captured in Ashland County on 23 Jun 1997, 19 lb. pup too small to collar

<sup>h</sup>Recaptured by Wildlife Services 17 May 1998 in Burnett County, translocated to Forest County 27 May 1998

<sup>i</sup>Captured in deer farm in Oneida County, translocated to Forest County

<sup>j</sup>Captured by Wildlife Services on farm, translocated to Price County 30 Jul 2002

<sup>k</sup>Captured by Wildlife Services on farm, translocated to Vilas County 30 Jul 2002

<sup>l</sup>Possible hybrid

<sup>m</sup>Dispersed to Michigan

<sup>n</sup>Captured by coyote trapper

<sup>o</sup>Captured in cable restraint trial

<sup>p</sup>Recaptured wolf; first captured as a yearling in Jackson County on 24 Sep 2000

<sup>q</sup>Lost transmitter

<sup>r</sup>Recaptured wolf; first captured as a pup in Jackson County on 28 Jul 2001

<sup>s</sup>Captured by Wildlife Services, translocated to Oneida County 28 Aug 2001

<sup>t</sup>Captured by Wildlife Services on farm, translocated to Menominee County 29 Aug 2002

<sup>u</sup>Captured by Wildlife Services on farm, translocated to Vilas County 1 Nov 2002

<sup>v</sup>Captured in Dickenson County, Michigan

\* Lost signal

\*\* Died

NE = No Estimate

Table 3. Pack and lone wolf summaries in Wisconsin, winter 2003-20004. (Map #'s refer to Figure 2.)

| Map #                            | Pack or Area     | Block  | Counties      | Winter Count | Pup Estim. | Evid. <sup>1</sup> | Collared Wolf    | Breed. <sup>2</sup> |
|----------------------------------|------------------|--------|---------------|--------------|------------|--------------------|------------------|---------------------|
| <b><u>Northern Wisconsin</u></b> |                  |        |               |              |            |                    |                  |                     |
| 1                                | Pokegama River   | 1      | Douglas       | 2            | 0          | T                  | O                | Y                   |
| 2                                | Foxboro          | 2      | Douglas       | 3-5          | 1?         | T                  | O                | Y                   |
| 3                                | Truck Trail      | 2      | Douglas       | 4-5          | 2          | T                  | O                | Y                   |
| 4                                | North Empire     | 3      | Douglas       | 3+           | 1          | T                  | O                | Y                   |
| 5                                | South Empire     | 3      | Douglas       | 2+           | ?          | T                  | O                | Y                   |
| 6                                | Moose Lake       | 4      | Douglas       | 6            | 2-4        | R                  | 473M A           | Y                   |
| 7                                | Lake Nebagamon   | 6      | Douglas       | 2            | 0?         | O                  | O                | ?                   |
| 8                                | Shoberg Lake     | 6      | Douglas       | 3            | 1?         | O                  | O                | ?                   |
| 9                                | Casey Creek      | 7      | Douglas       | 4            | 1-2        | T                  | O                | ?                   |
| 10                               | Poplar River     | 7      | Douglas       | 2            | 0          | O                  | O                | ?                   |
| 11                               | Chain Lake       | 8      | Douglas       | 2-4          | ?          | T                  | O                | ?                   |
| 12                               | Crotte Creek     | 9      | Douglas       | 6-8          | 4-6        | T                  | O                | Y                   |
| 13                               | Bird Sanctuary   | 9      | Douglas       | 6            | 2-4        | R                  | 447F A           | Y                   |
| 14                               | Riverside        | 10     | Burnett       | 2            | 0          | T                  | O                | Y                   |
| 15                               | Moose Road       | 11     | Douglas       | 2+           | 0          | T                  | O                | ?                   |
| 16                               | Chase Brook      | 11     | Burnett       | 3            | 1?         | T                  | O                | Y                   |
| 17                               | Stuntz Brook     | 12     | Washburn      | 2            | 0?         | O                  | O                | Y                   |
| 18                               | Crex Loner       | 13     | Burnett       | 1+           |            | T                  | O                | N                   |
| 19                               | Sterling Barrens | 14     | Burnett/Polk  | 2-4          | ?          | T                  | O                | ?                   |
| 20                               | Clam River       | 17     | Burnett/Polk  | 2            | 0          | R                  | 460F A           | ?                   |
| *                                | Dugan Lake       | 19,21  | Washburn      | 1-2          | 0          | O                  | O                | N                   |
| 21                               | Blue Hills South | 20,126 | Rusk/Barron   | 2+           | 0?         | T/O                | O                | ?                   |
| 22                               | Blue Hills North | 20     | Rusk/Sawyer   | 1+           | 0          | T                  | O                | N                   |
| 23                               | Tranus Lake      | 22     | Washburn      | 6            | 4          | T/O                | O                | Y?                  |
| 24                               | Springbrook      | 22     | Washburn      | 2            | 0          | R                  | 446F A           | ?                   |
| 25                               | Frog Creek       | 23     | Douglas/Wash. | 5-6          | 2-3        | T                  | O                | Y                   |
| 26                               | Ghost Lake       | 24     | Bayf./Sawyer  | 3-4          | 1-2        | T                  | O                | Y                   |
| 27                               | Seeley Hills     | 24     | Bayf./Sawyer  | 3            | 1?         | T                  | O                | Y                   |
| 28                               | Smoky Hill       | 25     | Bayf./Sawyer  | 2+           | 0          | T                  | O                | Y                   |
| 29                               | Bearsdale        | 25     | Bayfield      | 4            | 1-2        | R/T                | 472F A           | Y                   |
| 30                               | Moreland Lake    | 26     | Bayfield      | 5            | 2-3        | T                  | 464F A           | Y                   |
| 31                               | Rainbow Lake     | 27     | Bayfield      | 4-5          | 1-3        | T                  | O                | Y                   |
| 32                               | Ino Swamp        | 27     | Bayfield      | 3            | 1?         | O                  | O                | ?                   |
| 33                               | Bibbon Swamp     | 28     | Bayfield      | 5            | 1-3        | T                  | O                | Y                   |
| 34                               | Porcupine Lake   | 29     | Bayfield      | 3            | 1?         | T                  | O                | Y                   |
| 35                               | Moquah           | 30     | Bayfield      | 2            | 1?         | O                  | O                | N                   |
| 36                               | Orienta Falls    | 31,7   | Douglas/Bayf. | 4            | 1-2        | T                  | O                | Y                   |
| 37                               | Flag River       | 31,32  | Bayfield      | 3            | 1-2        | R                  | 438M A<br>439F A | Y                   |
| 38                               | Siskiwit Lake    | 32,33  | Bayfield      | 3            | 1?         | T                  | O                | ?                   |
| 39                               | Echo Valley      | 33     | Bayfield      | 3            | 1          | T                  | O                | Y                   |
| 40                               | Beaver Dam Lake  | 34,35  | Ashland/Bayf. | 5            | 3          | T                  | O                | Y                   |
| 41                               | Hellhole Creek   | 35     | Ashland/Bayf. | 3            | ?          | R/T                | 444F A           | Y                   |
| 42                               | Brush Creek      | 36     | Ashland       | 3            | 1?         | T                  | O                | Y                   |
| 43                               | Black Lake       | 37     | Ashl./Sawyer  | 3-6          | 1-3?       | R/T                | 462M A           | Y                   |
| 44                               | Round Lake       | 37     | Sawyer        | 3            | 1          | T                  | 457M A           | Y                   |
| 45                               | Torch River      | 38,36  | Ashland       | 5-7          | 2-3        | R/T                | 248M A           | Y                   |
| 46                               | Shanagolden      | 38,36  | Ashland       | 9-11         | 6-7        | T                  | O                | Y                   |
| 47                               | Hungry Run       | 38,40  | Ashland       | 6-7          | 2-4        | T                  | O                | Y                   |

Table 3. cont.

| Map # | Pack or Area         | Block   | Counties       | Winter Count | Pup Estim. | Evid. <sup>1</sup> | Collared Wolf    | Breed. <sup>2</sup> |
|-------|----------------------|---------|----------------|--------------|------------|--------------------|------------------|---------------------|
| 48    | West Firelane        | 39      | Ashland        | 4            | 1?         | T/R                | 036F A           | ?                   |
| 49    | Morrison Creek       | 39      | Ashland/Iron   | 4            | 1-2?       | T                  | O                | ?                   |
| 50    | White River          | 39,34   | Ashland        | 2            | 0          | T/O                | O                | ?                   |
| 51    | Log Creek            | 40      | Ashland        | 4-6          | 2          | T                  | O                | Y                   |
| 52    | Price Creek          | 41      | Price/Sawyer   | 3-6          | 1+         | T                  | O                | Y                   |
| 53    | Thornapple River     | 41      | Sawyer         | 3            | ?          | T                  | O                | Y                   |
| 54    | Davis Lake           | 41,52   | Price          | 3            | ?          | T                  | O                | Y                   |
| 55    | Eddy Creek           | 42      | Sawyer         | 2            | 0          | T                  | O                | Y                   |
| 56    | Tupper Creek         | 43      | Sawyer         | 2            | 0          | T                  | O                | Y                   |
| 57    | Haystack Corner      | 43      | Sawyer/Rusk    | 4            | 2          | O                  | O                | Y                   |
| 58    | Spring Creek         | 44      | Price          | 5            | 3          | T                  | O                | Y?                  |
| 59    | Skinner Creek        | 44      | Price          | 4-5          | 2-3        | T                  | O                | Y                   |
| 60    | Green Creek          | 46      | Price/Rusk     | 2            | 0          | T                  | O                | Y                   |
| 61    | Kidrick Swamp        | 47      | Taylor         | 4            | 1-2        | T                  | O                | Y                   |
| 62    | Mondeaux Flowage     | 47      | Taylor         | 2-3          | ?          | T                  | O                | ?                   |
| 63    | Averill Creek South  | 48      | Lincoln        | 4            | 1-2        | T                  | 489M P           | Y                   |
| 64    | Spirit Lake          | 49      | Lincoln/Taylor | 3            | 1?         | R/T                | 456F A           | Y                   |
| 65    | Little Rice River    | 51,67   | Oneida/Price   | 9            | 4-6        | R/T                | 355M A           | Y                   |
| *     | Loner 481M           | 51,52   | Price          | 1            | 0          | R                  | 481M A           | N                   |
| 66    | Bootjack Lake        | 53      | Price/Oneida   | 2            | 0          | T                  | 466F Y           | Y?                  |
| 67    | Miles Lake           | 54      | Price/Vilas    | 2            | 0          | T                  | O                | Y                   |
| 68    | Hoffman Lake         | 55      | Ashland/Iron   | 5-6          | 2-3        | T                  | O                | Y                   |
| 69    | Murray's Landing     | 55      | Iron           | 5-6          | 2-3        | R/T                | 481M A<br>469M A | Y                   |
| 70    | Eastside Firelane    | 56      | Ashland        | 3-4          | 1+         | T                  | O                | ?                   |
| 71    | Chippewa River       | 56      | Iron/Ashland   | 2            | 0          | T/R                | 351M A           | Y                   |
| 72    | Augustine Lake       | 57      | Iron/Ashland   | 3+           | 1?         | T                  | O                | ?                   |
| 73    | O'Brien Lake         | 57,59   | Iron           | 3+           | 1?         | T                  | O                | Y                   |
| 74    | Pine Lake            | 58      | Iron           | 2            | 0          | T/R                | 448F Y<br>497M A | Y?                  |
| 75    | Cedar Lake           | 62      | Iron           | 2            | 0          | O                  | O                | ?                   |
| 76    | North Willow         | 65      | Oneida         | 4            | 1-2        | R/T                | 461F Y<br>482M A | Y                   |
| 77    | Somo River           | 68      | Lincoln        | 5            | 2-3        | T                  | O                | Y                   |
| 78    | Ranger Island        | 69      | Lincoln        | 4            | 2          | R                  | G664MA<br>479M P | Y                   |
| 79    | Averill Creek North  | 70      | Lincoln        | 7            | 3-4        | R/T                | 485F Y           | Y                   |
| 80    | Harrison Hills Loner | 71      | Lincoln        | 1            | 0          | T                  | O                | N                   |
| 81    | Pelican Lake         | 76,77   | Oneida         | 2            | 0?         | T                  | 332F A           | ?                   |
| 82    | Stella Lake          | 77      | Oneida         | 2            | 0          | R/T                | 376F A           | Y                   |
| *     | Bearskin Loner       | 78      | Oneida         | 1            | 0          | T                  | O                | N                   |
| *     | Stone Lake Loner     | 79      | Oneida         | 1            | 0          | T                  | O                | N                   |
| 83    | Escanaba Lake        | 80      | Vilas          | 3            | 1?         | T/O                | O                | ?                   |
| 84    | Nineweb Lake         | 81      | Vilas          | 2-3          | 0?         | T                  | O                | Y                   |
| 85    | Giant Pine           | 84      | Forest         | 3            | 1?         | T/O                | O                | ?                   |
| 86    | Ada Lake             | 92      | Oconto/Lang.   | 3            | 1          | T                  | O                | Y                   |
| 87    | Alvin Creek          | 96,97   | Forest         | 2            | 0          | T                  | O                | Y                   |
| 88    | Morgan Lake          | 98      | Florence       | 2            | 0          | T                  | O                | Y                   |
| 89    | Camp 6               | 101,102 | Forest/Marin.  | 2            | 0          | T                  | O                | Y                   |

Table 3. cont.

|     |                                 |                                |   | Winter | Pup   |                    |                            |                     |
|-----|---------------------------------|--------------------------------|---|--------|---|--------------------|----------------------------|---------------------|
|     | Pack or Area                    | Block                          | Counties  | Count  | Estim.  | Evid. <sup>1</sup> | Collared Wolf              | Breed. <sup>2</sup> |
| *   | Shawano Creek Loner             | 102                            | Forest  | 1      | 0   | T                  | O                          | N                   |
| 90  | Pike River                      | 107                            | Marinette   | 3      | 0   | R/T                | 336M A                     | Y                   |
| 91  | Dunbar                          | 108                            | Marin./Floren.                                      | 5-7    | 3-5   | T                  | 474M A                     | Y                   |
| *   | Pemebonwon Loner                | 110                            | Marinette   | 1      | 0   | T                  | O                          | N                   |
| 92  | Lake Noquebay                   | 113                            | Marinette   | 2      | 0   | T                  | O                          | N                   |
| *   | Beaver Creek Loner              | 114                            | Marinette   | 1      | 0   | O                  | O                          | N                   |
| 93  | Long Lake                       | 126                            | Rusk  | 2      | 0   | R/T                | 393F A                     | Y                   |
| *   | Loner 474M                      | 130,90                         | Menom./Shaw.  | 1      | 0   | R                  | 474M A                     | N                   |
| 94  | Oconto River                    | 131                            | Oconto  | 3      | 0   | R                  | 449M Y<br>452F Y<br>454F A | N                   |
|     | Door Loner                      |                                | Door/Kewaun.  | 1      | 0   | O                  | O                          | N                   |
|     | <b>Northern WI Totals</b>       | <b>12 Loners<br/>91 Packs</b>  | <b>317-350 Total wolves<br/>3.5-3.8 wolves/pack</b> |        |   |                    | <b>91-127 Pups</b>         |                     |
|     | <b><u>Central Wisconsin</u></b> |                                |   |        |   |                    |                            |                     |
| 95  | Eau Claire River                | 117                            | E. Claire/Clark                                     | 4      | 1-2   | T                  | O                          | Y                   |
| 96  | Iron Run                        | 118                            | Clark   | 4      | 1-2   | T                  | O                          | Y                   |
| 97  | Wedges Creek                    | 118                            | Clark   | 2      | 0   | T                  | O                          | Y                   |
| 98  | Two Korner                      | 119                            | Jackson   | 4-5    | 1-3   | T                  | O                          | Y                   |
| 99  | Noch Hanai                      | 119                            | Jackson   | 3      | 0?  | O                  | O                          | ?                   |
| 100 | Martin Marsh                    | 119                            | Jackson   | 3      | 1-2   | R/O                | 429F A                     | N?                  |
| 101 | Wildcat Mound                   | 120                            | Jackson   | 3      | 1   | +                  | 416M P                     | Y                   |
| 102 | Bear Bluff                      | 121                            | Jackson   | 3-4    | 1-2   | R/T                | 311F A<br>426F Y<br>413F P | Y                   |
| 103 | South Bluff                     | 121                            | Wood  | 2      | 0   | T                  | O                          | Y?                  |
| 104 | Dead Creek                      | 121,122                        | Monroe/Jacks.                                       | 5-7    | 3-5   | T                  | 411F P                     | Y                   |
| 105 | Silo                            | 122                            | Juneau  | 5      | 2-3   | O                  | O                          | Y?                  |
| 106 | Fort McCoy                      | 123                            | Monroe  | 2      | 0   | R/T                | 465F A                     | Y                   |
| 107 | Seneca                          | 124                            | Wood  | 3      | 1?  | T                  | 341F A<br>414F P           | Y                   |
| *   | Pittsville Loner                | 124                            | Wood  | 1      | 0   | T                  | O                          | N                   |
| 108 | Rattail                         | 125                            | Juneau  | 2      | 0   | R/T                | 340F A<br>338M A           | Y                   |
| 109 | Colburn W.A.                    | 127                            | Adams   | 2      | 0   | T                  | O                          | ?                   |
| 110 | Caves Creek                     | 128                            | Marqu./Adams  | 2      | 0   | R/O                | 425F Y                     | ?                   |
| *   | Yellow River Loner              | 129                            | Juneau  | 1      | 0   | T                  | O                          | N                   |
| 111 | Mead W.A.                       | 133                            | Wood/Marath.  | 4      | 2   | T/O                | O                          | Y?                  |
|     | <b>Central WI Totals</b>        | <b>2 Loners<br/>17 Packs</b>   | <b>56-60 Total wolves<br/>3.3-3.5 wolves/pack</b>   |        |   |                    | <b>14-23 Pups</b>          |                     |
|     | <b>Statewide Totals</b>         | <b>14 Loners<br/>108 Packs</b> | <b>373-410 Total wolves<br/>3.5-3.8 wolves/pack</b> |        | <b>12 wolves on reservations<br/>361-398 off reservations</b> |                    | <b>105-150 Pups</b>        |                     |

<sup>1</sup> R = Radiotelemetry T = Track Surveys O = Observation Reports<sup>2</sup> Y = Yes N = No Y? = Possible ? = Unknown

\* Loners not mapped.

Table 4. Wolves dying in Wisconsin from 1 July 2003 to 30 June 2004.

| <b>Wolf #<br/>&amp; Sex</b> | <b>Age<sup>a</sup></b> | <b>Date<br/>Captured</b> | <b>Date<br/>Died</b> | <b>County<br/>Died</b> | <b>Cause of<br/>Death</b> |
|-----------------------------|------------------------|--------------------------|----------------------|------------------------|---------------------------|
| ----F                       | Y                      | -----                    | 14 Jul 03            | Douglas                | Vehicle Collision         |
| ----M                       | P                      | -----                    | 19 Jul 03            | Jackson                | Vehicle Collision         |
| ----F                       | A                      | -----                    | 26 Jul 03            | Burnett                | Euthanized/Depredation    |
| 241F                        | 6                      | 20 Nov 97                | 6 Aug 03             | Bavfield               | Vehicle Collision         |
| 412F                        | P                      | 30 Jul 03                | 8 Aug 03             | Jackson                | Disease?                  |
| 431F                        | A                      | 1 Jun 02                 | 16 Aug 03            | Bavfield               | Euthanized/Depredation    |
| ----M                       | P                      | -----                    | 17 Aug 03            | Bavfield               | Euthanized/Depredation    |
| ----M                       | A                      | -----                    | 17 Aug 03            | Bavfield               | Euthanized/Depredation    |
| ----M                       | P                      | -----                    | 19 Aug 03            | Bavfield               | Euthanized/Depredation    |
| ----M                       | A                      | -----                    | 21 Aug 03            | Bavfield               | Euthanized/Depredation    |
| ----F                       | P                      | -----                    | 21 Aug 03            | Bavfield               | Euthanized/Depredation    |
| ----M                       | P                      | -----                    | 22 Aug 03            | Bavfield               | Euthanized/Depredation    |
| ----M                       | A                      | -----                    | 23 Aug 03            | Bavfield               | Euthanized/Depredation    |
| ----F                       | P                      | -----                    | 24 Aug 03            | Bavfield               | Euthanized/Depredation    |
| ----M                       | P                      | -----                    | 24 Aug 03            | Bavfield               | Euthanized/Depredation    |
| ----F                       | P                      | -----                    | 24 Aug 03            | Bavfield               | Euthanized/Depredation    |
| 476M                        | A                      | 21 Jun 03                | 25 Aug 03            | Douglas                | Unknown                   |
| ----M                       | P                      | -----                    | 29 Aug 03            | Taylor                 | Euthanized/Depredation    |
| ----M                       | A                      | -----                    | 15 Sep 03            | Washburn               | Shot                      |
| ----M                       | Y                      | -----                    | 26 Sep 03            | Sauk                   | Vehicle Collision         |
| ----M                       | A?                     | -----                    | 23 Nov 03            | Marinette              | Shot                      |
| 411F                        | P                      | 23 Jul 03                | 25 Nov 03            | Jackson                | Shot                      |
| 489M                        | P                      | 23 Aug 03                | 25 Nov 03            | Lincoln                | Shot                      |
| 464F                        | A                      | 16 May 03                | 17 Dec 03            | Bavfield               | Other Wolves?             |
| 351M                        | A                      | 17 Jun 00                | 19 Dec 03            | Ashland                | Mange?                    |
| 458F                        | A                      | 4 Sep 02                 | 19 Dec 03            | Forest                 | Mange?                    |
| ----M                       | A                      | -----                    | 1 Jan 04             | Bavfield               | Vehicle Collision         |
| ----F                       | A                      | -----                    | 6 Jan 04             | Marathon               | Vehicle Collision         |
| ----F                       | Y?                     | -----                    | 28 Jan 04            | Jefferson              | Vehicle Collision         |
| ----F                       | Y                      | -----                    | 29 Jan 04            | Outagamie              | Vehicle Collision         |
| ----M                       | Y?                     | -----                    | 31 Jan 04            | Oconto                 | Mange?                    |
| 438M                        | A                      | 21 May 02                | 3 Feb 04             | Bavfield               | Mange                     |
| 340F                        | A                      | 5 Aug 01                 | 16 Feb 04            | Juneau                 | Shot                      |
| 341F                        | 3                      | 31 May 01                | 16 Feb 04            | Wood                   | Shot                      |
| 249F                        | 2                      | 24 Oct 02                | 16 Feb 04            | Door                   | Shot                      |
| ----F                       | Y                      | -----                    | 22 Feb 04            | Wood                   | Vehicle Collision/Euth.   |
| (H)F                        | Y                      | -----                    | 3 Mar 04             | Juneau                 | Vehicle Collision         |
| 497M                        | A                      | 28 Feb 04                | 16 Mar 04            | Iron                   | Mange                     |

Table 4. cont.

| <b>Wolf #<br/>&amp; Sex</b> | <b>Age<sup>a</sup></b> | <b>Date<br/>Captured</b> | <b>Date<br/>Died</b> | <b>County<br/>Died</b> | <b>Cause of<br/>Death</b> |
|-----------------------------|------------------------|--------------------------|----------------------|------------------------|---------------------------|
| ----M                       | A                      | -----                    | 16 Mar 04            | Oneida                 | Mange?                    |
| (H)?                        | ?                      | -----                    | 26 Mar 04            | Marquette              | Vehicle Collision         |
| ----M                       | Y                      | -----                    | 31 Mar 04            | Portage                | Shot?                     |
| ----F                       | A                      | -----                    | 20 Apr 04            | Juneau                 | Vehicle Collision         |
| ----F                       | Y?                     | -----                    | 24 Apr 04            | Marathon               | Vehicle Collision/Euth.   |
| 429F                        | A                      | 3 Jun 02                 | 27 Apr 04            | Jackson                | Vehicle Collision/Euth.   |
| 469M                        | A                      | 6 Aug 03                 | 27 Apr 04            | Iron                   | Shot                      |
| ----M                       | A                      | -----                    | 28 Apr 04            | Rusk                   | Euthanized/Depredation    |
| ----?                       | A                      | -----                    | 30 Apr 04            | Douglas                | Vehicle Collision?        |
| ----M                       | Y                      | -----                    | 5 May 04             | Brown                  | Vehicle Collision         |
| ----M                       | ?                      | -----                    | 6 May 04             | Portage                | Vehicle Collision         |
| M4914M                      | A                      | 18 Oct 03                | 8 May 04             | Rusk                   | Vehicle Collision         |
| ----M                       | A                      | -----                    | 8 May 04             | Bavfield               | Mange?                    |
| ----?                       | A?                     | -----                    | 19 May 04            | Adams                  | Vehicle Collision         |
| ----F                       | Y                      | -----                    | 21 May 04            | Bavfield               | Euthanized/Depredation    |
| ----F                       | A                      | -----                    | 22 May 04            | Bavfield               | Euthanized/Depredation    |
| ----F                       | A                      | -----                    | 26 May 04            | Sawver                 | Vehicle Collision?        |
| ----?                       | A                      | -----                    | 28 May 04            | Langlade               | Vehicle Collision         |
| ----M                       | A                      | -----                    | 29 May 04            | Rusk                   | Euthanized/Depredation    |
| ----?                       | A                      | -----                    | 11 Jun 04            | Douglas                | Vehicle Collision?        |
| ----?                       | P                      | -----                    | 11 Jun 04            | Forest                 | ?                         |
| ----M                       | A                      | -----                    | 13 Jun 04            | Douglas                | Euthanized/Depredation    |
| 507M                        | A                      | 14 Jun 04                | 14 Jun 04            | Oneida                 | Capture Related           |
| 468F                        | A                      | 12 Jun 04                | 15 Jun 04            | Bavfield               | Capture Related?          |
| ----F                       | A                      | -----                    | 18 Jun 04            | Bavfield               | Euthanized/Depredation    |
| ----F                       | A                      | -----                    | 19 Jun 04            | Douglas                | Euthanized/Depredation    |
| ----M                       | A                      | -----                    | 25 Jun 04            | Barron                 | Euthanized/Depredation    |
| ----M                       | P                      | -----                    | 26 Jun 04            | Washburn               | Vehicle Collision         |

<sup>a</sup> Age at time of death

(H) Possible Hybrid

Table 5. Mortality summary of radio-collared wolves in Wisconsin and adjacent areas of Minnesota from October 1979 – June 2004.

|                       | <b>Cause of Death</b>         | <b>Number</b> | <b>% Known Mortality</b> |
|-----------------------|-------------------------------|---------------|--------------------------|
| <b>Human Causes</b>   | Capture Related               | 6             | 5%                       |
|                       | Shot Wound*                   | 38            | 29%                      |
|                       | Trapped                       | 3             | 2%                       |
|                       | Vehicle Collision             | 18            | 14%                      |
|                       | Euthanized (depredation)      | 1             | 1%                       |
|                       | <u>Unknown Human Causes</u>   | <u>5</u>      | <u>4%</u>                |
|                       | <i>Total Human Causes</i>     | <i>71</i>     | <i>55%</i>               |
| <b>Natural Causes</b> | Accident                      | 1             | 1%                       |
|                       | Birthing Complications        | 1             | 1%                       |
|                       | Disease                       | 34            | 26%                      |
|                       | Killed by Other Wolves        | 17            | 13%                      |
|                       | Malnutrition/Starvation       | 2             | 2%                       |
|                       | <u>Unknown Natural Causes</u> | <u>3</u>      | <u>2%</u>                |
|                       | <i>Total Natural Causes</i>   | <i>58</i>     | <i>45%</i>               |
| <b>Totals</b>         | <i>Known Mortality</i>        | <i>129</i>    | <i>100%</i>              |
|                       | <u>Unknown Mortality</u>      | <u>13</u>     |                          |
|                       | <b>Total Mortality</b>        | <b>142</b>    |                          |

\* 36 wolves shot by firearm; 2 wolves by bow and arrow

Table 6. Probable and possible wolf observations reported by natural resource agency personnel and private citizens in Wisconsin in July 2003 – June 2004.

| <b>County</b> | <b>Sightings</b> | <b>Wolves Seen</b> | <b>Track or Sign Observations</b> | <b>Total Observations</b> |
|---------------|------------------|--------------------|-----------------------------------|---------------------------|
| Adams         | 0                | 0                  | 2                                 | 2                         |
| Ashland*      | 8                | 11                 | 5                                 | 13                        |
| Barron        | 1                | 1                  | 0                                 | 1                         |
| Bayfield*     | 10               | 27                 | 6                                 | 16                        |
| Brown         | 3                | 4                  | 0                                 | 3                         |
| Burnett*      | 4                | 11                 | 3                                 | 7                         |
| Dane          | 5                | 6                  | 0                                 | 5                         |
| Door          | 6                | 10                 | 0                                 | 6                         |
| Douglas*      | 4                | 7                  | 4                                 | 8                         |
| Dunn          | 1                | 1                  | 0                                 | 1                         |
| Florence*     | 2                | 3                  | 4                                 | 6                         |
| Forest*       | 8                | 8                  | 7                                 | 15                        |
| Grant         | 1                | 1                  | 0                                 | 1                         |
| Iron*         | 13               | 23                 | 3                                 | 16                        |
| Jackson*      | 2                | 5                  | 0                                 | 2                         |
| La Crosse     | 0                | 0                  | 1                                 | 1                         |
| Langlade*     | 3                | 3                  | 2                                 | 5                         |
| Lincoln*      | 9                | 15-16              | 2                                 | 11                        |
| Manitowoc     | 2                | 4                  | 0                                 | 2                         |
| Marathon*     | 6                | 6                  | 1                                 | 7                         |
| Marinette*    | 17               | 23                 | 11                                | 28                        |
| Marquette*    | 4                | 11                 | 0                                 | 4                         |
| Menominee     | 1                | 1                  | 1                                 | 2                         |
| Oconto*       | 4                | 6                  | 3                                 | 7                         |
| Oneida*       | 5                | 20-22              | 15                                | 20                        |
| Outagamie     | 2                | 2                  | 0                                 | 2                         |
| Polk*         | 0                | 0                  | 2                                 | 2                         |
| Price*        | 13               | 16                 | 10                                | 23                        |
| Rusk*         | 4                | 11                 | 1                                 | 5                         |
| Sauk          | 2                | 2                  | 1                                 | 3                         |
| Sawyer*       | 5                | 6                  | 5                                 | 10                        |
| Shawano       | 2                | 2                  | 1                                 | 3                         |
| Vilas*        | 6                | 12                 | 3                                 | 9                         |
| Washburn*     | 11               | 19                 | 5                                 | 16                        |
| Washington    | 1                | 1                  | 0                                 | 1                         |
| Waukesha      | 2                | 2                  | 0                                 | 2                         |
| Waupaca       | 2                | 2                  | 0                                 | 2                         |
| Waushara      | 1                | 1                  | 0                                 | 1                         |
| Winnebago     | 2                | 2                  | 0                                 | 2                         |
| Wood*         | 2                | 3                  | 0                                 | 2                         |
| <b>Totals</b> | <b>174</b>       | <b>288-291</b>     | <b>98</b>                         | <b>272</b>                |

\* Counties with known breeding packs during winter of this study period. No observations were reported from Clark, Juneau, Monroe, Portage, and Taylor Counties where a breeding pack is known to exist.

Zone 1 - 204 reports  
Zone 2 - 10 reports

Zone 3 - 32 reports  
Zone 4 - 26 reports

Table 7. Disease testing of wolves captured in Wisconsin in 2002 and 2003. (Positive results in italics)

| Wolf #<br>& Sex           | Age | Date<br>Captured | Serum<br>CPV  | ICH | CDV           | EE            | Lyme        | Blasto | Mange <sup>a</sup> |
|---------------------------|-----|------------------|---------------|-----|---------------|---------------|-------------|--------|--------------------|
| <b>Northern Wisconsin</b> |     |                  |               |     |               |               |             |        |                    |
| -----M <sup>b</sup>       | P   | 07/17/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| G994M                     | A   | 07/20/03         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| G996M                     | A   | 06/13/03         | ---           | --- | ---           | <i>≥1:512</i> | Neg.        | ---    | Y/L                |
| W249F                     | Y   | 10/24/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W295F <sup>c,d</sup>      | A   | 06/28/02         | ---           | --- | ---           | ---           | ---         | ---    | Y/L                |
| W332F <sup>d,e</sup>      | A   | 10/28/03         | ---           | --- | ---           | Neg.          | Neg.        | ---    | N                  |
| W430M <sup>c</sup>        | A   | 05/18/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W431F                     | A   | 06/01/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W432F <sup>c</sup>        | Y   | 07/25/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W433M                     | A   | 06/05/02         | <i>1:5120</i> | --- | <i>1:2048</i> | <i>1:256</i>  | Neg.        | Neg.   | N                  |
| W434M                     | A   | 05/29/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W435F <sup>c</sup>        | P   | 07/26/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W436F <sup>c</sup>        | Y   | 07/13/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W437F                     | A   | 05/11/02         | <i>1:1280</i> | --- | <i>1:12</i>   | <i>1:1024</i> | <i>Pos.</i> | Neg.   | N                  |
| W438M                     | A   | 05/21/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W439F                     | A   | 05/22/02         | <i>1:5120</i> | --- | 1:8           | <i>1:128</i>  | <i>Pos.</i> | Neg.   | Y/L                |
| W440F                     | Y   | 06/08/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W441F <sup>c</sup>        | Y   | 07/03/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W443F <sup>c</sup>        | P   | 07/23/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W444F                     | A   | 06/25/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W446F                     | A   | 06/13/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W447F                     | A   | 06/21/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W448F                     | Y   | 05/20/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W449M <sup>c</sup>        | P   | 07/18/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W450F <sup>c</sup>        | P   | 07/20/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W452F <sup>c</sup>        | P   | 07/22/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W453M <sup>c</sup>        | A   | 07/17/02         | ---           | --- | ---           | ---           | <i>Pos.</i> | Neg.   | N                  |
| W454F <sup>c</sup>        | A   | 07/18/02         | ---           | --- | ---           | ---           | <i>Pos.</i> | Neg.   | N                  |
| W455F <sup>c</sup>        | A   | 07/18/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W456F <sup>c</sup>        | Y   | 07/12/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W457M <sup>c</sup>        | A   | 09/10/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W458F <sup>c</sup>        | A   | 09/04/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W459M                     | A   | 10/26/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W460F <sup>c</sup>        | A   | 10/17/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W461F                     | P   | 11/20/02         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W462M                     | A   | 06/01/03         | ---           | --- | ---           | <i>1:128</i>  | <i>Pos.</i> | ---    | N                  |
| W464F                     | A   | 05/16/03         | ---           | --- | ---           | <i>1:512</i>  | Neg.        | ---    | Y/H                |
| W466F                     | Y   | 07/02/03         | ---           | --- | ---           | <1:16         | Neg.        | ---    | Y/L                |
| W469M                     | A   | 08/06/03         | ---           | --- | ---           | ---           | <i>Pos.</i> | ---    | Y/L                |
| W472F <sup>e</sup>        | Y   | 11/07/03         | ---           | --- | ---           | <i>1:128</i>  | Neg.        | ---    | Y/H                |
| W473M                     | A   | 06/29/03         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W474M                     | A   | 05/19/03         | ---           | --- | ---           | <1:16         | Neg.        | ---    | N                  |
| W476M                     | A   | 06/21/03         | ---           | --- | ---           | <i>1:512</i>  | <i>Pos.</i> | ---    | N                  |
| W479M                     | P   | 08/23/03         | ---           | --- | ---           | ---           | ---         | ---    | N                  |
| W481M                     | A   | 07/07/03         | ---           | --- | ---           | <i>≥1:512</i> | Neg.        | ---    | N                  |
| W482M                     | A   | 06/10/03         | ---           | --- | ---           | <i>1:256</i>  | <i>Pos.</i> | ---    | N                  |
| W485F                     | Y   | 09/07/03         | ---           | --- | ---           | Neg.          | <i>Pos.</i> | ---    | N                  |

Table 7. cont.

| <b>Wolf #<br/>&amp; Sex</b>      | <b>Age</b>          | <b>Date<br/>Captured</b> | <b>Serum<br/>CPV</b> | <b>ICH</b>   | <b>CDV</b>   | <b>EE</b>    | <b>Lyme</b> | <b>Blasto</b> | <b>Mange<sup>a</sup></b> |
|----------------------------------|---------------------|--------------------------|----------------------|--------------|--------------|--------------|-------------|---------------|--------------------------|
| W489M                            | P                   | 08/23/03                 | ---                  | ---          | ---          | ---          | ---         | ---           | N                        |
| W779M <sup>f</sup>               | P                   | 06/13/03                 | ---                  | ---          | ---          | ---          | ---         | ---           | N                        |
| <b>Central Wisconsin</b>         |                     |                          |                      |              |              |              |             |               |                          |
| W311F <sup>d</sup>               | A                   | 08/01/03                 | 1:320                | 1:256        | 1:1024       | 1:256        | Pos.        | ---           | N                        |
| W338M <sup>d</sup>               | Y                   | 07/28/02                 | 1:5120               | ≥1:512       | 1:4096       | <1:16        | Neg.        | Neg.          | N                        |
| W349F                            | P                   | 07/03/02                 | 1:10                 | 1:256        | 1:16         | ---          | ---         | ---           | Y/M                      |
| W401M                            | P                   | 07/05/02                 | 1:10                 | ≥1:512       | 1:24         | ---          | ---         | ---           | Y/M                      |
| W402M                            | P                   | 07/06/02                 | 1:10                 | 1:384        | 1:16         | ---          | ---         | ---           | Y/M                      |
| W404M                            | P                   | 07/06/02                 | 1:10                 | 1:192        | 1:24         | ---          | ---         | ---           | Y/M                      |
| W405M                            | P                   | 07/20/02                 | 1:10                 | 1:4          | 1:32         | ---          | ---         | ---           | N                        |
| W406F                            | P                   | 07/27/02                 | 1:10                 | 1:4          | 1:16         | ---          | ---         | ---           | N                        |
| W407F                            | P                   | 07/28/02                 | 1:10                 | 1:4          | 1:24         | ---          | ---         | ---           | N                        |
| W408M                            | P                   | 08/03/02                 | 1:10                 | 1:48         | 1:24         | ---          | ---         | ---           | Y/L                      |
| W409M                            | P                   | 08/10/02                 | 1:2560               | 1:4          | 1:8          | ---          | ---         | ---           | N                        |
| W410F                            | P                   | 08/17/02                 | 1:1280               | 1:4          | 1:32         | ---          | ---         | ---           | N                        |
| W411F                            | P                   | 07/23/03                 | 1:5120               | 1:4          | 1:64         | ---          | ---         | ---           | N                        |
| W412F                            | P                   | 07/30/03                 | 1:160                | 1:4          | 1:8          | ---          | ---         | ---           | Y/H                      |
| W413F                            | P                   | 08/05/03                 | 1:2560               | 1:4          | 1:12         | 1:512        | Neg.        | Neg.          | Y/H                      |
| W414F                            | P                   | 08/10/03                 | 1:640                | 1:4          | 1:8          | 1:512        | Neg.        | Neg.          | N                        |
| W415F                            | P                   | 08/29/03                 | 1:640                | 1:192        | 1:4          | ≥1:512       | Neg.        | ---           | N                        |
| W416M                            | P                   | 09/09/03                 | 1:640                | 1:256        | 1:12         | 1:256        | Neg.        | ---           | N                        |
| W420M                            | A                   | 08/11/02                 | 1:1280               | 1:4          | 1:2048       | 1:128        | Pos.        | Neg.          | N                        |
| W421F                            | A                   | 08/13/02                 | 1:320                | ≥1:384       | 1:1024       | 1:512        | Pos.        | Neg.          | N                        |
| W426F                            | Y                   | 07/02/02                 | 1:2560               | ≥1:512       | 1:3072       | >1:512       | Pos.        | Neg.          | N                        |
| W427F                            | Y                   | 07/06/02                 | 1:640                | ≥1:512       | 1:24         | 1:256        | Pos.        | Neg.          | N                        |
| W429F                            | A                   | 06/03/02                 | 1:320                | ---          | 1:1536       | 1:128        | Pos.        | Neg.          | N                        |
| W442M                            | A                   | 07/06/02                 | 1:1280               | ≥1:512       | 1:1024       | 1:512        | Pos.        | Neg.          | Y/M                      |
| W465F <sup>e</sup>               | A                   | 12/13/02                 | ---                  | ---          | ---          | ---          | ---         | ---           | N                        |
| <b>Positive/<br/>Total Tests</b> | <b>C. Wisconsin</b> |                          | <b>16/24</b>         | <b>13/23</b> | <b>20/24</b> | <b>11/12</b> | <b>7/12</b> | <b>0/9</b>    |                          |
|                                  | <b>N. Wisconsin</b> |                          | <b>3/3</b>           | <b>---</b>   | <b>2/3</b>   | <b>10/14</b> | <b>9/17</b> | <b>0/5</b>    |                          |

Serum CPV = Serum canine parvovirus, positive value >1:40 (Dr. Dubovi, Cornell Diagnostic Lab, 9-10-02)

ICH = Infectious canine hepatitis, positive value >1:8

CDV = Canine distemper virus, positive value >1:8 (Dr. Dubovi, Cornell Diagnostic Lab, 9-10-02)

EE = Ehrlichia equi, positive value >1:16

Lyme = Lyme disease

Blasto = Blastomycosis

<sup>a</sup> Possible mange detected on wolves during handling; N = Not found, Y = Found, /L = Light, /M = Moderate, /H = Heavy.

<sup>b</sup> Captured by Wildlife Services on farm, died in captivity.

<sup>c</sup> Captured by Wildlife Services during depredation trapping.

<sup>d</sup> Re-capture.

<sup>e</sup> Captured by coyote trapper.

<sup>f</sup> Not collared, too small.

Table 8. Wolf depredation cases on livestock and pets in Wisconsin, July 2003 through June 2004.

| <b>Date</b>           | <b>Animal Lost</b>         | <b>Pack Involved</b> | <b>County</b> | <b>Payments</b> | <b>Trapping</b> |
|-----------------------|----------------------------|----------------------|---------------|-----------------|-----------------|
| 07/16/2003            | 1 dog (Plott)              | Haystack Corner      | Sawyer        | \$2500.00       | No              |
| 07/21/2003            | 4 calves                   | Riverside?           | Burnett       | No Claim        | 1 wolf          |
| 07/23/2003            | 1 dog (Plott)              | Haystack Corner      | Sawyer        | \$750.00        | No              |
| 07/26/2003            | 1 dog (Redbone)            | Blue Hills North     | Rusk          | \$1800.00       | No              |
| 08/01/2003            | 1 cow, 1 calf              | Mondeaux Flowage     | Taylor        | \$1500.00       | 1 wolf          |
| 08/02/2003            | 2 calves                   | Loner?               | Ashland       | \$1100.00       | No              |
| 08/04 &<br>08/15/2003 | 9 lambs                    | Spring Creek?        | Price         | \$1125.00       | 0 wolves        |
| 08/09/2003            | 2 calves                   | Moquah               | Bayfield      | \$1500.00       | 8 wolves        |
| 08/22 &<br>08/23/2003 | 2 sheep, 8 lambs           | Oriente Falls        | Bayfield      | \$1250.00       | 3 wolves        |
| 08/30/2003            | 1 dog (Plott)              | Haystack Corner      | Rusk          | \$2500.00       | No              |
| 10/01/2003            | 1 calf                     | Blue Hills South?    | Rusk          | \$600.00        | No              |
| 10/02/2003            | 1 cow                      | Loner?               | Burnett       | \$1400.00       | No              |
| 10/27/2003            | 1 calf                     | Loner?               | Chippewa      | \$500.00        | No              |
| 12/20/2003            | 1 dog (Walker)             | Murray's Landing     | Iron          | \$1500.00       | No              |
| 01/25/2004            | 1 dog inj. (G. Dane/boxer) | Beaver Dam Lake      | Ashland       | \$1,091.45      | No              |
| 01/26/2004            | 1 dog (beagle)             | Casey Creek          | Douglas       | \$500.00        | No              |
| 03/18 &<br>4/18/2004  | 2 calves                   | Blue Hills South     | Rusk          | Pending         | 0 wolves        |
| 03/22/2004            | 6 deer (game farm)         | Moquah?              | Bayfield      | \$5,300.00      | 0 wolves        |
| 03/29/2004*           | 1 dog inj. (Poodle)        | Possible hybrid      | Bayfield      | \$215.01        | No              |
| 04/11/2004            | 1 calf                     | Long Lake            | Rusk          | No Claim        | 1 wolf          |
| 04/29/2004            | 1 calf                     | Bearsdale            | Bayfield      | \$450.00        | 0 wolves        |
| 05/03/2004            | 1 cow                      | Loner?               | Rusk          | \$1200.00       | 1 wolf          |
| 05/15/2004            | 1 calf                     | Moquah               | Bayfield      | \$650.00        | 0 wolves        |
| 05/19/2004            | 3 calves                   | Bibbon Swamp         | Bayfield      | No Claim        | 2 wolves        |
| 05/19/2004            | 1 dog (Yorkshire)          | Round Lake?          | Sawyer        | \$400.00        | No              |
| 05/25/2004            | 1 calf                     | Poplar River         | Douglas       | No Claim        | 0 wolves        |
| 05/27/2004            | 1 calf & 1 cow             | Disperser?           | Langlade      | \$2800.00       | 0 wolves        |
| 06/07/2004            | 1 cow                      | Poplar River         | Douglas       | \$1100.00       | 3 wolves        |
| 06/13/2004            | 1 calf                     | Ino Swamp or Moquah  | Bayfield      | Pending         | 1 wolf          |
| 06/18/2004            | 2 calves                   | Blue Hills South     | Barron        | Pending         | 1 wolf          |
| 06/21/2004            | 1 dog (Blue Heeler)        | Loner?               | Taylor        | \$1000.00       | No              |

\*Unconfirmed

Table 8. cont.

| <b>Depredation Summary</b> |  |                 |   |                    |  |
|----------------------------|--|-----------------|---|--------------------|--|
| <b>31 cases</b>            | <b>62 animals killed</b><br><b>2 animals injured</b>   | <b>16 packs</b> | <b>12 counties</b><br><b>20 farms</b><br><b>1 deer farm</b> | <b>\$32,731.46</b> | <b>17 farms WS</b><br><b>attempted</b><br><b>trapping</b><br><b>22 live-trapped</b><br><b>21 euthanized</b><br><b>1 pup released</b> |
|                            | <b>24 calves killed</b><br><b>5 cows killed</b><br><b>19 sheep killed</b><br><b>6 deer killed</b><br><b>8 dogs killed</b><br><b>2 dogs injured</b> |                 |   |                    | <b>1 farm DOW</b><br><b>donated money</b><br><b>for new well</b>   |

Table 9. Suspected wolf-dog hybrid incidents and problems in Wisconsin, 1 July 2003 – 30 June 2004.

| <b>Date</b> | <b>County</b> | <b>No. of wolf-dogs<br/>Age/Sex</b> | <b>Problem</b>                                 | <b>Outcome</b>                   |
|-------------|---------------|-------------------------------------|--|----------------------------------|
| 08/19/04    | Juneau        | 1 A/M                               | Stealing Dog Food                              | Captured                         |
| 09/09/03    | Ozaukee       | 1 A?/sex?                           | Scaring Neighbors                              | Unknown                          |
| 10/23/03    | Marquette     | 1                                   | Possible hybrid in horse pasture               | Unknown                          |
| 10/30/03    | Eau Claire    | 1A                                  | Bit dog  | Euthanized Hybrid                |
| 11/01/03    | Menominee     | 5+ (3+ A, 2+ P)                     | Approaching homes                              | Unknown                          |
| 11/05/04    | Oneida        | 1 A/M                               | Free-roaming in City                           | Captured                         |
| 11/06/03    | Marquette     | 1-2                                 | Possible hybrids harassing horses              | WS provided strobe light         |
| 1/24/04     | Langlade      | 4                                   | Possible hybrids frequenting residence         | Flashing lights installed by WS  |
| 03/03/04    | Juneau        | Y/F                                 | Possible hybrid killed by vehicle collision    | Disposed                         |
| 03/03/04    | Milwaukee     | 2 A                                 | Free-roaming in City                           | Unknown                          |
| 03/26/04    | Marquette     | ??                                  | Possible hybrid killed by vehicle collision    | Disposed                         |
| 03/29/04    | Bayfield      | A/F                                 | Running lose/attacked injured poodle           | Recovered by owner<br>Euthanized |
| 04/07/04    | Marathon      | ?/F                                 | Shot   | Killed; UW-Zool. Col.            |
| 04/11/04    | Ozaukee       | A/?                                 | Running Lose                                   | Shot by Cty. SO                  |
| 05/18/04    | Florence      | 2 A/F                               | Aggressive to Human                            | Shot by landowner                |
| 06/??/04    | Oconto        | 1A                                  | Aggressive to Human                            | Unknown                          |
| 06/02/04    | Winnebago     | A/F                                 | Aggressive to Human                            | Shot by Landowner                |
| 06/24/04    | Lincoln       | P/F                                 | Possible hybrid captured in Averill Creek pack | Too small to collar; unknown.    |

Table 10. Wolf pack territories 2003-2004. (mapped in Figure 2)

| Pack Name           | Map # | Year <sup>a</sup>    | Collared Wolf | # of radio locations | # of other locations <sup>b</sup> | Area (Mi <sup>2</sup> ) |
|---------------------|-------|----------------------|---------------|----------------------|-----------------------------------|-------------------------|
| <b>Zone 1</b>       |       |                      |               |                      |                                   |                         |
| Ada Lake            | 86    | Approx. <sup>c</sup> | None          | 0                    | 0                                 | NE <sup>d</sup>         |
| Alvin Creek         | 87    | Approx.              | None          | 0                    | 1                                 | NE                      |
| Augustine Lake      | 72    | 1999                 | W229          | -                    | 0                                 | NE                      |
| Averill Creek North | 79    | 2004                 | W485          | 27                   | 5                                 | 80                      |
| Averill Creek South | 63    | 2004                 | W489          | 12                   | 3                                 | 35                      |
| Bearsdale           | 29    | 2004                 | W472          | 24                   | 1                                 | 34                      |
| Beaver Dam Lake     | 40    | Approx.              | None          | 0                    | 2                                 | NE                      |
| Bibbon Swamp        | 33    | Approx.              | None          | 0                    | 0                                 | NE                      |
| Bird Sanctuary      | 13    | 2004                 | W447          | 53                   | 7                                 | 41                      |
| Black Lake          | 43    | 2004                 | W370, W462    | 44                   | 6                                 | 46                      |
| Blue Hills North    | 22    | Approx.              | None          | 0                    | 1                                 | NE                      |
| Blue Hills South    | 21    | Approx.              | None          | 0                    | 9                                 | NE                      |
| Bootjack Lake       | 66    | 2004                 | W466          | 25                   | 3                                 | 89                      |
| Brush Creek         | 42    | 2002                 | M310          | -                    | 2                                 | NE                      |
| Camp 6              | 89    | Approx.              | None          | 0                    | 2                                 | NE                      |
| Casey Creek         | 9     | Approx.              | None          | 0                    | 8                                 | NE                      |
| Cedar Lake          | 75    | Approx.              | None          | 0                    | 0                                 | NE                      |
| Chain Lake          | 11    | 2004                 | W291          | 15                   | 4                                 | 43                      |
| Chase Brook         | 16    | 2002                 | W367          | -                    | 1                                 | NE                      |
| Chippewa River      | 71    | 2004                 | W351          | 34                   | 1                                 | 29                      |
| Crex Meadow         | 18    | Approx.              | None          | 0                    | 0                                 | NE                      |
| Crotte Creek        | 12    | 2002                 | W296          | -                    | 3                                 | NE                      |
| Davis Lake          | 54    | Approx.              | None          | 0                    | 5                                 | NE                      |
| Dunbar              | 91    | 2004                 | W474          | 28                   | 6                                 | 34                      |
| Eastside Firelane   | 70    | Approx.              | None          | 0                    | 4                                 | NE                      |
| Echo Valley         | 39    | Approx.              | None          | 0                    | 5                                 | NE                      |
| Eddy Creek          | 55    | Approx.              | None          | 0                    | 0                                 | NE                      |
| Escanaba Lake       | 83    | Approx.              | None          | 0                    | 0                                 | NE                      |
| Flag River          | 37    | 2004                 | W438, W439    | 91                   | 0                                 | 41                      |
| Foxboro             | 2     | Approx.              | None          | 0                    | 4                                 | NE                      |
| Frog Creek          | 25    | Approx.              | None          | 0                    | 0                                 | NE                      |
| Ghost Lake          | 26    | Approx.              | None          | 0                    | 3                                 | NE                      |
| Giant Pine          | 85    | Approx.              | None          | 0                    | 3                                 | NE                      |
| Green Creek         | 60    | Approx.              | None          | 0                    | 5                                 | NE                      |
| Harrison Hills      | 80    | 2004                 | W246          | 14                   | 4                                 | 38                      |
| Haystack Corner     | 57    | Approx.              | None          | 0                    | 1                                 | NE                      |
| Hellhole Creek      | 41    | 2004                 | W444          | 49                   | 4                                 | 54                      |
| Hoffman Lake        | 68    | 2003                 | W459          | 21                   | 16                                | NE                      |
| Hungry Run          | 47    | Approx.              | None          | 0                    | 7                                 | NE                      |
| Ino Swamp           | 32    | Approx.              | None          | 0                    | 4                                 | NE                      |
| Kidrick Swamp       | 61    | Approx.              | None          | 0                    | 2                                 | NE                      |
| Lake Nebagamon      | 7     | 2003                 | W440          | 29                   | 1                                 | NE                      |
| Lake Noquebay       | 92    | Approx.              | None          | 0                    | 10                                | NE                      |
| Little Rice River   | 65    | 2004                 | W355          | 51                   | 6                                 | 83                      |
| Log Creek           | 51    | 2002                 | W286          | -                    | 11                                | NE                      |
| Miles Lake          | 67    | Approx.              | None          | 0                    | 0                                 | NE                      |
| Mondeaux Flowage    | 62    | 2003                 | W441          | 15                   | 2                                 | NE                      |

Table 10. cont.

| <b>Pack Name</b> | <b>Map #</b> | <b>Year<sup>a</sup></b> | <b>Collared Wolf</b> | <b># of radio locations</b> | <b># of other locations<sup>b</sup></b> | <b>Area (Mi<sup>2</sup>)</b> |
|------------------|--------------|-------------------------|----------------------|-----------------------------|---|------------------------------|
| Moose Lake       | 6            | 2004                    | W473                 | 42                          | 6                                       | 41                           |
| Moose Road       | 15           | 2001                    | W155                 | -                           | 1                                       | NE                           |
| Moquah           | 35           | 2004                    | W431                 | 17                          | 7                                       | 64                           |
| Moreland Lake    | 30           | 2004                    | W464                 | 26                          | 0                                       | 55                           |
| Morgan Lake      | 88           | Approx.                 | None                 | 0                           | 1                                       | NE                           |
| Morrison Creek   | 49           | Approx.                 | None                 | 0                           | 0                                       | NE                           |
| Murray's Landing | 69           | 2004                    | W469,W481            | 70                          | 9                                       | 49                           |
| Nineweb Lake     | 84           | 2000                    | W318                 | -                           | 2                                       | NE                           |
| North Empire     | 4            | 2000                    | W298                 | -                           | 2                                       | NE                           |
| North Willow     | 76           | 2004                    | G996,W461,W482       | 84                          | 0                                       | 82                           |
| O'Brien Lake     | 73           | Approx.                 | None                 | 0                           | 1                                       | NE                           |
| Orienta Falls    | 36           | Approx.                 | None                 | 0                           | 7                                       | NE                           |
| Pelican Lake     | 81           | 2004                    | W332                 | 32                          | 6                                       | 55                           |
| Pike River       | 90           | 2004                    | W336                 | 35                          | 10                                      | 51                           |
| Pine Lake        | 74           | 2004                    | W448                 | 29                          | 1                                       | 87                           |
| Pokegama River   | 1            | Approx.                 | None                 | 0                           | 10                                      | NE                           |
| Poplar River     | 10           | Approx.                 | None                 | 0                           | 0                                       | NE                           |
| Porcupine Lake   | 34           | 2004                    | W241                 | 15                          | 10                                      | 64                           |
| Price Creek      | 52           | 2001                    | W368                 | -                           | 10                                      | NE                           |
| Rainbow Lake     | 31           | 1996                    | W255                 | -                           | 1                                       | NE                           |
| Ranger Island    | 78           | 2004                    | G994, W479           | 50                          | 2                                       | 20                           |
| Riverside        | 14           | Approx.                 | None                 | 0                           | 2                                       | NE                           |
| Round Lake       | 44           | 2004                    | W457                 | 34                          | 4                                       | 79                           |
| Seeley Hills     | 27           | Approx.                 | None                 | 0                           | 0                                       | NE                           |
| Shanagolden      | 46           | Approx.                 | None                 | 0                           | 4                                       | NE                           |
| Shoberg Lake     | 8            | 1999                    | W290                 | -                           | 0                                       | NE                           |
| Siskiwit Lake    | 38           | 2003                    | W369                 | 49                          | 0                                       | NE                           |
| Skinner Creek    | 59           | Approx.                 | None                 | 0                           | 3                                       | NE                           |
| Smoky Hill       | 28           | Approx.                 | None                 | 0                           | 0                                       | NE                           |
| Somo River       | 77           | 2004                    | W456                 | 34                          | 9                                       | 50                           |
| South Empire     | 5            | 2003                    | W297                 | 40                          | 1                                       | NE                           |
| Spirit Lake      | 64           | 2004                    | W456                 | 13                          | 6                                       | 24                           |
| Spring Creek     | 58           | Approx.                 | None                 | 0                           | 9                                       | NE                           |
| Springbrook      | 24           | 2004                    | W446                 | 22                          | 0                                       | 19                           |
| Stella Lake      | 82           | 2004                    | W376                 | 51                          | 1                                       | 18                           |
| Sterling Barrens | 19           | Approx.                 | None                 | 0                           | 7                                       | NE                           |
| Stuntz Brook     | 17           | 1999                    | W295                 | -                           | 1                                       | NE                           |
| Thornapple River | 53           | 1997                    | W239                 | -                           | 4                                       | NE                           |
| Torch River      | 45           | 2004                    | W248                 | 42                          | 4                                       | 56                           |
| Tranus Lake      | 23           | 2002                    | W292                 | -                           | 5                                       | NE                           |
| Truck Trail      | 3            | 2004                    | W476                 | 9                           | 10                                      | 49                           |
| Tupper Creek     | 56           | 1998                    | W276                 | -                           | 1                                       | NE                           |
| West Firelane    | 48           | 2004                    | M036                 | 48                          | 2                                       | 35                           |
| White River      | 50           | Approx.                 | None                 | 0                           | 1                                       | NE                           |

Table 10. cont.

| <b>Pack Name</b>      | <b>Map #</b> | <b>Year<sup>a</sup></b> | <b>Collared Wolf</b> | <b># of radio locations</b> | <b># of other locations<sup>b</sup></b> | <b>Area (Mi<sup>2</sup>)</b> |
|-----------------------|--------------|-------------------------|----------------------|-----------------------------|---|------------------------------|
| <b><u>Zone 2</u></b>  |              |                         |                      |                             |   |                              |
| 2-Korner              | 98           | Approx.                 | None                 | 0                           | 0                                       | NE                           |
| Bear Bluff            | 102          | 2004                    | W311,W412,W413,W426  | 96                          | 1                                       | 46                           |
| Caves Creek           | 110          | 2004                    | W426                 | 10                          | 3                                       | 10                           |
| Colburn Wildlife Area | 109          | Approx.                 | None                 | 0                           | 2                                       | NE                           |
| Dead Creek            | 104          | 2004                    | W411                 | 19                          | 0                                       | 11                           |
| Eau Claire River      | 95           | Approx.                 | None                 | 0                           | 0                                       | NE                           |
| Iron Run              | 96           | 2003                    | W309                 | 45                          | 0                                       | NE                           |
| Martin Marsh          | 100          | 2004                    | W415,W429            | 46                          | 1                                       | 36                           |
| Noch Hanai            | 99           | 2001                    | W269                 | -                           | 0                                       | NE                           |
| Rattail               | 108          | 2004                    | W338,W340            | 75                          | 1                                       | 62                           |
| Seneca                | 107          | 2004                    | W341,W414            | 56                          | 2                                       | 12                           |
| Silo                  | 105          | Approx.                 | None                 | 0                           | 0                                       | NE                           |
| South Bluff           | 103          | Approx.                 | None                 | 0                           | 0                                       | NE                           |
| Wedges Creek          | 97           | Approx.                 | None                 | 0                           | 0                                       | NE                           |
| Wildcat Mound         | 101          | 2004                    | W416                 | 12                          | 1                                       | 11                           |
| <b><u>Zone 3</u></b>  |              |                         |                      |                             |   |                              |
| Clam River            | 20           | 2004                    | W460                 | 52                          | 2                                       | 56                           |
| Ft. McCoy             | 106          | 2004                    | W465                 | 7                           | 0                                       | 11                           |
| Long Lake             | 93           | 2004                    | W393                 | 49                          | 1                                       | 23                           |
| Mead Wildlife Area    | 111          | Approx.                 | None                 | 0                           | 4                                       | 0                            |
| Oconto River          | 94           | 2004                    | W449,W452,W454       | 146                         | 1                                       | 38                           |

<sup>a</sup> Based on available radio locations between 15 April of the previous year to 14 April of the year listed.

<sup>b</sup> Other locations from track surveys, mortalities, depredations, & public and agency reports.

<sup>c</sup> Territory boundaries approximated based on track surveys, mortalities, depredations, & public and agency reports.

<sup>d</sup> No estimate